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REPORT

OF

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BY

GEORGE M. KOBER, M.D., LL.D.

Chairman of the Committee

PUBLISHED BY
THE PRESIDENT'S HOMES COMMISSION
WASHINGTON, D. C.
1908

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REPORT

OF

Committee on Social Betterment

BY

GEORGE M. KOBER, M.D., LL.D.

CHAIRMAN OF THE COMMITTEE

PROFESSOR OF HYGIENE, SCHOOL OF MEDICINE
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WM. F. DOWNEY	MRS. THOMAS T. GAFF

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WASHINGTON, D. C.
1908

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Report of the Committee on Social Betterment.

INTRODUCTION.

The Committee on Social Betterment has realized throughout its work that the question of health is intimately connected with the physical, social and moral welfare of all persons whose only income is the product of their daily labor. Health is the chief asset of the working man, and no greater calamity can befall him than when his earning capacity is impaired, or arrested, by reason of sickness or disability. It means in many instances the utter financial ruin of the family and is doubtless one of the most potent causes of poverty and distress.

Many of the diseases are incident to occupations and environment, and industrial efficiency and earning power can be promoted by appropriate safeguards and adequate protection of the men, women and children engaged in gainful occupations.

It has been the aim of the Committee to emphasize, therefore, the causes and prevention of industrial diseases and also of some of the principal preventable diseases, like tuberculosis, pneumonia, typhoid fever, sexual diseases, etc.

The Committee has also studied the standards of living in 1,217 families; of these 476, or 39 per cent, had a family income of $500 or less per annum; 159, or 13 per cent, had an income of from $500 to $600; 153, or 12½ per cent, from $600 to $700; 153, or 12½ per cent, from $700 to $800; 89, or 7 per cent, from $800 to $900; 93, or 8 per cent, from $900 to $1,000; and 94, or 8 per cent, had an annual income of over $1,000.

The results of these fairly accurate returns concerning income and expenditures and general standards of living are set forth in a special report by Mr. G. A. Weber, of the Bureau of Labor, who was appointed Statistician to supervise the work. The data with reference to the expenditures for rent, food, liquor, tobacco, sickness and death, including expenditures for patent medicines; number of working hours, wage-earners' lunches, insurance, installment purchases, usury, etc., are of interest and importance.

In addition to [illegible] [illegible]ep well and capacitated for work," the Comm[illegible] [illegible] homes and better the liv[illegible] [illegible] attention should be given to the question "How to live well and cheaply," and for this purpose invoked the aid of Dr. C. F. Langworthy, Expert in Nutrition of the United States Department of Agriculture, who cheerfully consented to prepare a special article on "Good food at reasonable cost." Miss E. W. Cross of the department of domestic science of the McKinley Manual Training School has worked out dietaries and menus for families with an income of $1.50 a day.

Believing that a survey of the causes which lead up to low standards of living would not be complete without reference to the Alcohol question, the tobacco and drug habits, the great nostrum evil, and the usury evil, special studies have been made of these subjects and the results with suitable recommendations will be found in our report. Miss Mabel T. Boardman has prepared an excellent article on recreation and inexpensive amusements; Mr. James Bronson Reynolds has prepared the article on the business relations of wage-earners, and Mr. Wm. F. Downey has written the article "How to Benefit the Poor in the Slums." The thanks of the Committee are also due to Dr. Paul B. Johnson, Professor H. W. Wiley, Dr. Lyman F. Kebler, of the Bureau of Chemistry, for valuable material, and to General Sternberg for a careful revision of the manuscript.

Respectfully submitted,

GEO. M. KOBER,
Chairman Committee on Social Betterment.

WASHINGTON, D. C.
December 1, 1908.

RECOMMENDATIONS.

A careful survey of the situation justifies the following recommendations:

(1) The enactment of model factory and labor laws for the employees of the Government and for the District of Columbia. Such laws, apart from regulating the hours of labor, should also make adequate provisions for the sanitation of workshops, for employer's liability in case of accidents and for a comprehensive system of industrial insurance for all Government employees and employees in the District of Columbia. (See pp. 72-92 of Report submitted February 4, 1908.)

(2) The appointment by the President of a special board composed of Architects and Sanitarians now in the employ of the Government for the purpose of evolving model plans and building regulations for Government workshops and office buildings so that no such buildings will hereafter be erected without due regard to air space, ventilation, light, heating, temperature, humidity, sanitary conveniences, and other provisions, including sanitary supervision referred to in a previous Report, pp. 71-83.

(3) The establishment in the National Museum, and in connection with Museums in Industrial centers generally, of a special section devoted to exhibits illustrative of the hygiene of occupations, habitations, food, safety appliances and other collections for the promotion of industrial and social betterment of wage earners, along the lines indicated on pp. 85 and 86 of the Report, February 4, 1908. It may be found necessary to house such exhibits ultimately in a special building.

(4) While it is gratifying to record a very deep interest in the public schools of Washington in all matters related to social and industrial life, the Committee is of the opinion that even greater emphasis should be given in the curriculum to manual training and domestic science because the practical knowledge thus acquired not only inspires respect for manual labor and domestic service but constitutes in fact the foundation stone for intelligent work and home-making.

(5) The importance of a thorough practical training in domestic science is nowhere more evident than in a study of our family groups whose income is less than $700 a year. While conditions on the whole indicate a fierce struggle for existence, some splendid examples of neat and healthful homes, of thrift and happiness could be cited for the emulation of less competent neighbors.

(6) Since the scale of wages in certain occupations has not kept pace with the cost of living, the Committee recommends adequate compensation of all employees whether in the Government service or in other fields of activity. This applies with special emphasis to married men earning less than $2.00 a day. No effort should be spared to improve the social condition of poorly paid wage earners, and justice likewise demands an increase in the scale of salaried employees in order to compensate for the increased cost of living, especially when no such increase has been made within the past 10 years. It is believed that the principle of permanency of employment, which is so well established as to large numbers of Government employees, should be extended to others to whom it does not now apply, so far as the interests of the Government permit.

(7) The Committee is of the opinion that the standards of living could be materially improved by diminishing the expenditures for tobacco and intoxicants. Taken as a whole the families investigated could add on an average at least one room to their overcrowded homes if the money expended for these items were devoted to the payment of rent.

In order to restrict the consumption of these harmful agents much may be done by educational methods, the establishment of social settlements in connection with the public schools and churches, and the creation of genteel and inexpensive amusements calculated to counteract the influence of saloons and evil resorts. The sale of tobacco and intoxicants to persons under the age of twenty-one should be prohibited by law. We also recommend greater restriction in the sale of proprietary medicines containing alcohol in sufficient quantity to be intoxicants, and greater restriction in the licensing of saloons in residential and manufacturing sections.

We also recommend the enactment of a Bill introduced by Senator Gallinger making drunkenness a misdemeanor and placing habitual drunkards and drug habitués under legal restraint in the hospital for Inebriates in order to bring about their permanent reformation. The Committee believes that the provisions of the Bill will be materially strengthened by making the sale of intoxicants to habitual drunkards a criminal offence and to hold the seller responsible for all damages, when properly warned not to dispense intoxicants to minors and habitual drunkards.

(8) The Committee believes that public playgrounds and athletic fields will promote temperance and chastity and since we are familiar with the physical ravages of vice and disease and the public expenditures incident thereto, we recommend most liberal appropriations for all such moral and social prophylactic measures.

(9) Your Committee believes that quackery and the great nostru evil are frequent causes of physical and financial impoverishment. I view of the importance of the subject, we recommend the appointmen of a special board composed of a representative of the Attorney Genera in the Post Office Department, of the Public Health Service and the Chie of the Bureau of Chemistry, U. S. Department of Agriculture for th purpose of investigation and the formulation of such additional legislation as may be deemed necessary in the interest of public health an morals.

In the meantime, it is earnestly recommended that the Postmaste General be requested to publish with the monthly Supplements to the Official Postal Guide, a Bulletin setting forth the essential facts in connection with the fraud orders issued during the preceding month, such bulletins to be posted in Post Offices and to be distributed in sufficient numbers along Rural Delivery Routes.

We also recommend that all information concerning harmful ingredients in foods, medicines, soft and alcoholic drinks which may come to light during the execution of the pure food and drug law, be published by the Department of Agriculture in the same manner as "Farmers Bulletins" are now being published. The public is entitled to be warned and for this purpose the indisputable facts should emanate from some official source.

(10) The Committee strongly recommends the enactment of a law for the suppression of usury as contemplated by Senate Bill 2296 and H. R. 11,772. Your Committee is convinced that there is a necessity in every community for pawn shops and money lending concerns, to aid persons who are unable in an emergency to secure loans from banks, trust companies, or real estate brokers. It has been shown that the system now in vogue is attended with gross abuses, absolute extortion, and financial distress which calls for remedial action. Since it has also been demonstrated by the experience of the New York Provident Loan Society (a strictly business philanthropy) that such operations cannot be carried on at a lower rate of interest than one per cent. per month, we recommend that the maximum rate of interest be placed not higher than 2 per cent per month. This will legalize the business, enable respectable people to enter the field and by wholesome competition bring about the desired result. The license tax in the proposed bill should be reduced from $1,000 to $100 per annum; a suitable reduction should likewise be made on the Recorders' fees on chattel mortages involving amounts less than $100, as all these expenses are placed by indirection on the borrower. The execution of such a law involves careful official supervision, such as

is contemplated in the recommendation of Mr. James B. Reynolds in the creation of a Bureau of Labor.

(11) The creation of a Bureau of Labor would likewise render valuable services both to employers and employees in the supervision of employment agencies, the correction of abuses connected therewith, and also in the enforcement of labor laws, sanitation of factories, workshops, etc.

The fact that in our sociological study of 1,217 families comprising a population of 4,889, 2,202 or 45 per cent carried life insurance, and 855 or 17½ per cent. carried insurance against sickness constitutes a strong argument in favor of a comprehensive system of workingmen's insurance, and adequate supervision, such as recommended by Mr. Reynolds in his Report to the President, April 29, 1907.

(12) Our sociological investigation shows, that out of 5,157 persons enumerated, 613 or 12 per cent had been sick during the past year with an average duration of 29.5 days involving a loss of 18,083 days of work. This, together with information collected by the Board of Charities, emphasizes the need of hospital facilities for convalescents where the earning capacity of dependent patients after an acute illness may be expedited. As it is now, the recovery of such persons is greatly retarded by a return to insanitary homes, insufficient and improper food, etc.

(13) The cases of permanent disability found in the 1,217 families are comparatively few, namely 42. Of these the age is given in 39; 3 of these were under the age of 19 years; 14 between 20 and 49 years; and 22 were over 50 years. This does not include the cases cared for in public institutions, which are taxed to their utmost capacity.

In order to reduce the number of defectives, preventive measures must be invoked early in life and an able corps of teachers, Medical Inspectors and Instructive Visiting Nurses can render most efficient service. A recent inspection of 43,005 pupils in the public schools shows that 15,304 children, or 35.2 per cent of the total examined, are in need of medical or dental service.

Your Committee recommends that the study of hygiene be made an important part of the school curriculum, also the appointment of Instructive Visiting Nurses in the schools, and that Medical Inspectors, nurses and teachers be authorized to suggest to pupils and parents the desirability of securing prompt professional advice in all cases where it is indicated and especially in such instances as are likely to result in permanent disability.

(14) In the interest of general sanitation your Committee recommends: 1. The further purification of the water supply advocated by the officers in charge of the filtration plant. 2. The reclamation of the Ana-

costia Flats for the reduction of malarial fevers. 3. The enactment of a more stringent law regulating the production and sale of milk and dairy products, for the reduction of milk-borne diseases. 4. The abandonment of box privies, removal of slums, establishment of public baths for all seasons of the year, more liberal appropriations for the Health Department and a larger corps of sanitary inspectors so that the gospel of cleanliness and health may be enforced within and without the homes. 5. Greater co-operation on the part of the Police Courts with the efforts of the Health Department in the enforcement of sanitary laws and ordinances.

Some of these recommendations have been urged by the Commissioners for years; they are of vital importance to the health, not only of every permanent resident, but to the chief magistrate, his cabinet, the foreign ministers, thousands of public officials, the members of the Senate and House of Representatives, and all citizens having business with Congress, besides the numerous visitors who annually pay homage to the city of Washington.

ALIMENTATION AND FOODS.

The fact that proper nutrition of the body is important for the enjoyment of health has long since been recognized, and we all agree that the character of food not only influences the growth and development of the child, but also the health, power of endurance and resistance in the adult and often plays a most important if not decisive role in the treatment of disease.

The human organism is made up of about 60% of water, 19% of protein compounds, 15% of fats and 6% of mineral salts, all of which are sooner or later consumed, involving certain expenditures which must be covered if health and life are to be preserved.

The process by which the repair of waste is supplied is called alimentation or nutrition, and the entire process involved in the waste and repair of tissues is called metabolism. The simple chemical compounds which are appropriated by the system are called alimentary principles or nutrients, and the simple or artificial combinations of several nutrients are called nutriment or food.

The cause of the constant consumption of the proximate principles of the body must be looked for in the functional activity of the cells. We know that they take up, utilize, disintegrate and eliminate matter; this gives rise to the generation of heat and the evolution of force or mechanical power, both of which are the result of latent energy contained in the substances introduced into the system as food.

The heat and vital force of the heart and other muscles of the body have their source clearly in the process of oxidation of carbon and oxygen, which primarily takes place in the cells; and all nutrients containing carbon and hydrogen contribute to the generation of heat and the evolution of muscular force.

The chief objects of food are, according to Atwater, to form the material of the body and repair of its waste, and to yield heat to keep the body warm and muscular and other power for the work it has to do. The amount of energy contained in different food-stuffs has been measured in the laboratory by the amount of heat evolved during their combustion by means of an apparatus called the calorimeter. The unit commonly used is the calorie, by which we understand the amount of heat required to raise the temperature of a pound of water 1 degree F., or if transformed into mechanical power, such as the muscles use to do their work, a calorie represents force which would be sufficient to lift one ton 1.54 feet. Atwater gives the following general estimate for the average amount of heat and energy in 1 pound of each of the classes of nutrients:

1 pound of protein	1860 calories.
1 pound of fat	4220 "
1 pound of carbohydrates	1860 "

Since the supply of food stuff or income must be regulated by the consumption or outgo, it is essential that the consumption should be determined. Experiments of this kind are made in an apparatus called the "Respiration Calorimeter," and include not only a quantitative analysis of the food, drink and air consumed by the man and of all the excretory products, which make up the income and outgo of the system, but also a careful estimate of the energy represented by ingested material as well as the energy liberated from the body in the various excreta, in heat and mechanical energy.

The balance of income and expenditure is thus made, and the gain or loss of material of the body, with different kinds and amounts of food, and under different conditions of muscular exercise and rest, is determined. By means of these experiments, Prof. Atwater has been able to verify the law of the conservation of energy as applied to the animal organism, and has shown that every unit of energy which enters the body as potential energy of the food will leave the body in potential energy as excreta, in heat radiated from the body, or in mechanical work done by the muscular system. The material income of the body must balance the material outgo and the energy income of the body must balance the energy outgo.

According to the classical experiments of Pettenkoffer and Voit, nearly forty years ago, the waste products of a healthy adult weighing 154 pounds, during 24 hours, at rest amounted to 16.8 grams of nitrogen in the urine, 275 grams of carbon and 2,500 grams of water, while the waste products of the same individual, performing moderately hard muscular work, amounted to 18.8 grams of nitrogen, 328 of carbon and 2,190 grams of water, and from these experiments the authors named concluded that the following quantities of nutrients are required during 24 hours:

	Protein. Grams.	Fats. Grams.	Carbohydrates. Grams.
Man without muscular work	118	45	450
Man with moderate muscular work	118	56	500
Man with hard muscular work	145	100	500

Professor Chittenden's experiments, conducted about three years ago, indicate that the nitrogen equilibrium is preserved on a daily intake of 8.5 to 9.5 grams of nitrogen, or about 55 grams of nitrogenous food, so that the protein ration of Voit may be cut in two, provided the fats and carbohydrates are introduced in sufficient quantities to bring the full value up to 2,500 or 2,600 calories. Other authorities, however, believe that it would be unwise to reduce the protein ration below 100 grams or 3.5 ounces a day.

One of the difficulties in the way of setting up exact standards is as pointed out by Professor Atwater, that "different individuals of the same class differ widely in their demands for food and in the use they make of it. Two men of like age, size, build and occupation may live and work side by side. One will eat more and the other less, while both do the same amount of work, or both may eat the same food and do the same work, and one will be fat and the other lean, or both may have the same diet and yet one will be strong and vigorous and able to do a great deal of work, while the other will be weak and able to accomplish but little. Just why individuals differ in their ways of utilizing their food and how to measure the differences and make dietary rules to fit them exactly, are problems which the physiological chemist has not yet solved."

There are also persons who because of some peculiarity of the digestive system cannot use foods which for people in general are most wholesome and nutritious. Some persons cannot eat eggs, other suffer if they take milk, others have to avoid certain kinds of meat or fruit and all these indiosyncrasies indicate that the nutrition of man is not a mere matter of grams of protein, fats and carbohydrates. In fact we live not upon what we eat, but upon what we digest and assimilate.

The whole subject of dietary standards is still in its infancy and the best we can do is to make estimates which apply to averages rather than individual cases. In a general way we may conclude that the needs of the economy are influenced (1) by the height and weight of the individual amounting to a difference of 40-50 calories for each kilogram in body weight; (2) by the temperament—nervous and excitable persons require more food than those of a phlegmatic temperament; (3) by muscular activity, which involves not only an increased expenditure of carbon, but also increased consumption of protein. (4) Age in so far as during active growth there is also a more active metabolism and children consume more for each kilogram of their weight than adults; on the other hand, with advancing years tissue metamorphosis becomes less active. (5) Sex influences the amount of tissue consumption only in so far as there is a difference in weight and muscular activity, an exception should be noted in pregnant and nursing women, who doubtless should receive a more liberal supply of proteids. (7) By temperature and climate. The influence of low temperatures results in increased oxidation of carbon, hence an instinctive craving for more fatty food and the carbohydrates, sugar and starches during the winter months and in cold climates. In the summer months and in warm climates there is a repugnance for fat and a craving for refreshing food and drinks, and hence the minimum amount of fat, about 40 grams and between 300 to 400 grams of carbohydrates with a normal protein ration will meet the requirements.

Food stuffs are classified according to their proximate composition as follows:

First: Organic, nitrogenous, as proteids or albuminoids; non-nitrogenous—*a.* fats, *b.* carbohydrates, *c.* vegetable acids.

Second: Inorganic—mineral salts and water.

Third: Food accessories, as tea, coffee and condiments.

The first two classes of food stuff are essential to life, the third class is important as favoring palatability and digestibility.

The true nutrients are protein, fats and carbohydrates.

The term "protein" includes most of the nitrogenous food compounds, such as albuminoids, gelatinoids and extractives.

1. The albuminoids include all substances allied in their chemical composition to egg albumin, and have an average composition of N. 16%, C. 53%, H. 7%, O. 23%, S. 1%. They are found in eggs, lean part of meat, milk, curds and the gluten of wheat, the leguminous plants, etc. The principles of this group during digestion with the exception of nuclein are converted into soluble peptones or alkaline albuminates and readily absorbed as such; they are the chief tissue formers of the muscles and tendons of the body, but apart from this purely plastic function, they also play a role in oxidation and therefore in the generation of heat and energy. At all events they can take the place of fats and carbohydrates if the body has not enough of one or the other for fuel, but neither of the latter can take the place of albuminoids in building and repairing tissue.

2. The gelatinoids resemble the albuminoid group in their chemical composition; they are derived from ossein and chondrin (connective tissue) and are changed to gelatin on heating with water, and during digestion into gelatin-peptones. They are not tissue formers, but serve as fuel, and thus protect the protein fats and carbohydrates from consumption. Indeed 100 grams of gelatin can take the place of 36 grams of albumin and 25 grams of fat, but unfortunately large quantities are liable to cause nausea and diarrhea, probably because the undigested particles undergo rapid decomposition.

3. The extractives, so called because they are extracted from flesh by water, are known in the laboratory as creatin, creatinin, carnin, etc., and are the chief constituents of beef-tea and meat-extracts. Neither the extractives or amids found in vegetables like asparagus, betain, etc., can replace or exert a sparing effect on the consumption of albumin; they are therefore alimentary aids and not true foods.

Indeed Kemmerich, over twenty years ago, pointed out that they are not free from danger on account of the large percentage of potassium salt; at all events, it has been shown that animals fed exclusively on meat extracts die more quickly from starvation than do those deprived entirely of food, and Fothergill, one of the most distinguished English food-experts, expressed the opinion "that more lives have been lost by a mistaken belief in the food-value of beef-tea than by all the Napoleonic wars." Beef-tea acts as a regulator and stimulant of digestion and assimilation and like the meat-broths is useful in the dietary of sickness, provided we combine it with eggs, farinaceous food and small quantities of gelatin. The meat peptones and fluid meat, containing, as they do, considerable proportions of true nutriments, are much to be preferred but their nutritive value in the treatment of disease must not be overestimated.

4. The hydrocarbons of fats, whether derived from the animal or vegetable kingdom, are emulsified and saponified by the pancreatic juice and bile and finally reach the tissues where they become an integral part of the cells. Apart from aiding in the reconstruction of fatty tissues they undergo oxidation and thus supply heat and energy. Since the cells without exception contain more or less fat, it being, in conjunction with albumin, the principal constituent of nerve tissue, a store of adipose tissue, especially during febrile conditions, hard work or whenever the consumption exceeds the supply is very desirable. If the supply of fat exceeds the demand the excess is eliminated in the feces while other portions are stored up in the visceral cavities and subcutaneous tissues, where it serves as a non-conductor of heat, gives beauty and form to the body and protects various important structures from injury, but most important of all, if the supply should be cut off, or the consumption be increased, as during febrile conditions and hard work, this reserve fuel can be drawn upon for the production of heat and energy and thus protect the more important protein-compounds from oxidation.

5. The carbohydrates are non-nitrogenized principles which, in addition to carbon, contain hydrogen and oxygen in the proportion to form water. The formula for starch or dextrose is $C_6H_{10}O_5$ and that of sucrose or cane sugar $C_{12}H_{22}O_{11}$.

The carbohydrates, whatever their source, enter the blood as sugar; normal blood contains about 0.1% and rarely more than 0.2% of sugar. The liver prevents a large accumulation by storing it up as glycogen or liver-starch, which under the influence of a peculiar ferment is re-converted into sugar as the needs of the economy demand, and any further excess is removed by the kidneys. The sugar in the blood is carried to the tissues, where it undergoes oxidation, yielding heat and energy. It is generally held that carbohydrates when ingested in liberal amounts may be converted into fat. How this is accomplished is not yet understood, but it may partly be accounted for by the fact that the oxidation of sugar saves the fatty and protein tissues from destruction and allows the fat in the diet to form new fatty tissues.

6. The pectin substances, like pectose and pectin, found in fruit and tubers, form jellies with water, are related to the carbohydrates and probably serve similar purposes in the economy.

7. The organic acids, like tartaric, mallic, citric, acetic, oxalic and lactic acids existing in fresh vegetables and fruits, fresh meats and milk, are transformed in the system into carbonates and as such preserve the alkalinity of the blood and other fluids. In the absence of these acids the blood becomes impoverished and scurvy is liable to develop. An excess is likely to interfere with digestion, especially with the conversion of starch into sugar, not to mention the laxative and diuretic properties.

8. The fact that 60% of the body is composed of water clearly indicates that a sufficient amount must be introduced to make up the loss sustained by its excretion through the lungs, kidneys, skin and feces. It is simply necessary to recall the physiological functions of water in the absorption and assimilation of food, the elimination of waste products, and its role as a heat regulator to appreciate that a deficiency is certain to be followed by injurious effects.

9. The mineral salts, which furnish about 6% of the body weight, are potassium, calcium, magnesium, sodium and iron in combination with chlorine, phosphoric, sulphuric and carbonic acid. The phosphates of lime, potash and magnesia contribute largely to the formation of bone, and are also essential for the growth of the nervous system. Iron is required for the red blood corpuscles and coloring matters, the chlorides are the source of hydrochloric acid in the gastric juice and keep the globulins of the blood and other fluids of the body in solution. Potassium for the blood cells and solid tissues and sodium for the intercellular fluids are all essential for the growth and repair of the tissues; of these certain quantities are daily eliminated and must be replaced. Forster has shown that when the supply in animals is suspended, serious digestive derange-

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ments, depression of the nervous system, muscular weakness, trembling, paralysis, stupor and death ensue.

Voit's experiments indicate that an insufficient supply of the salts of lime produced rickets in growing animals, and children fed largely upon farinaceous food are proverbially prone to this affection; incomplete absorption of these salts produces the same effect, as shown by the frequent development of rickets after prolonged diarrheal affections.

An insufficient supply of iron or incomplete absorption may give rise to chlorosis and anemia, and a deficiency of the potassium salts in consequence of an exclusive animal diet is believed to favor the development of scurvy, but as this disease has developed among prisoners who subsisted largely on a vegetable diet, I quite agree with Fluegge that the absence of fresh vegetables, more especially the organic acids contained therein, is the most important factor in the development of scurvy. An excess of chloride of sodium, as during a constant salt meat diet, doubtless predisposes to scurvy, probably because the chloride of sodium exerts a decomposing effect on the potassium combinations of the blood corpuscles.

The question as to the exact requirements of the inorganic salts in the system has not yet been solved. According to Boussingault an adult requires from 60 to 90 mgrs. of iron daily, and according to König, persons upon a mixed diet require from 12 to 20 grams of sodium chloride.

In reference to accessory foods, such as spices and condiments, extractives of meat, bitter principles contained in vegetables, tonics, and the alkaloidal beverages like coffee, tea and cocoa, we cannot stop to point out their physiological effects, except to say that, since they act largely through the nervous system, every excess over and above the amount required will produce mischief; indeed we may safely conclude that, while the use of accessory foods in moderation increases temporarily the elasticity of mind and body and a desire and capacity for work, their abuse is fraught with danger.

FOOD.

The two broad divisions of food are animal and vegetable, although the mineral kingdom unites to furnish man with sustenance. Animal food is characterized by a predominance of the proteids and mineral salts, while vegetable food is rich in carbohydrates, which, however, like the vegetable albumin, are enclosed in cells composed of a fibrous frame-work known as cellulose, and therefore more difficult to be acted upon by the digestive fluids.

An excess of this cellulose usually excites undue peristaltic action and consequently a more rapid transit of the intestinal contents, and thus interferes with the complete utilization of the nutritive material; a certain amount of cellulose is necessary, however, to promote the action, because if the food was so nutritious as to be entirely absorbed, there would be very little solid to transmit and the action of the bowels would become irregular and unsatisfactory. Hence the good effect of graham bread, vegetables and fruit in habitual constipation.

ANIMAL FOOD.

MEAT.—In a dietetic point of view we mean by meat the muscular substance with its connective tissues, the fat and various juices deposited therein.

The nutritive value of meat depends upon the large percentage of protein. Dark meats, such as game and wild fowl and beef, contain from 18 to 25% of albumin.

The relative amount of nutritive matter is shown in the following table based upon analyses by König, Voit and others:

	Proteids.	Gelatin.	Fat.	Salts.	Extractives.
Beef	18.4 %	1.6%	0.9 %	1.3 %	1.9%
Veal	16.3 %	4.5%	1.0 %	1.0 %	0.9%
Mutton	17.5 %	....	1.5 %	1.2 %	1.4%
Pork, fresh, lean	15.5 %	1.5%	5.5 %	1.2 %	1.3%
Ham, medium fat	15.3 %	....	28.9 %	0.8 %	....
Ham, smoked, lean	19.8 %	....	20.8 %	5.5 %	....
Horse	21.7 %	....	2.5 %	1.0 %	....
Game (Rabbit)	23.3 %	....	1.1 %	1.1 %	....
Broiler chicken	21.5 %	....	2.5 %	.....	....
Fowls	19.3 %	....	16.3 %	1.0 %	....
Turkey	21.1 %	....	22.9 %	1.0 %	....

According to the foregoing table, game and fowl are richest in proteids, salts and extractives; veal and pork are poorest in proteids; veal richest in gelatin; ham and pork richest in fat; horse and veal poorest in fat; beef richest in extractives; veal poorest in extractives.

All of which explains the superior nutritive value of game and wild fowl, in the so-called dark meats and also the superior flavor of beef and fowl over veal and pork, and also explains the rich amount of gelatin in veal-broth and gravies.

The particular part from which the meat is derived also influences the percentage of proteids, as shown by König:

The meat from a shoulder piece of beef contains 14.50% proteids.
" " " the loins " " 18.80% proteids.
" " " neck " " 19.50% proteids.
" " " hind-quarter " " 20.81% proteids.

The meat of young animals, on account of the excess of water, contains less nutriment, but because of the more delicate connective tissue is more readily digested.

Fish.—The meat of fish contains about the same food stuffs, only in smaller proportions, due to the excess of water. Most of the fish meat contains from 15 to 20% of proteids, but oysters, crabs and lobsters contain only from 5 to 10%. There is little or no difference in the digestibility of white and dark meats, as from 95 to 96% are utilized. Fish meat, contrary to popular opinion, contains less phosphates than that of other animals.

	Proteids.	Fats.	Salts.	Carbohydrates.
Oysters	9.78%	2.05%	1.98%	5.89%
Canned oysters	7.41%	2.07%	2.15%	3.95%
Clams	14.55%	1.79%	2.76%	2.94%
Mussels	12.51%	1.67%	1.73%	5.42%
Lobsters	14.49%	1.84%	1.71%	.....
Crab	16.64%	1.96%	3.13%	.....
Shrimps canned	25.38%	1.00%	2.58%	.....
Terrapin	21.23%	3.47%	1.02%	.....
Green turtle	19.84%	0.53%	1.20%	.....

According to J. König and the U. S. Commissioner of Fisheries the composition of fish meat is as follows:

	Proteids.	Fats.	Salts.
Haddock	16.71%	0.20%	1.44%
Pike	18.34%	0.51%	0.93%
Carp	21.86%	1.09%	1.33%
Herring	10.11%	7.11%	2.07%
Eel	12.83%	28.37%	0.81%
Salmon	15.01%	6.42%	1.36%
Shad	18.55%	9.48%	1.35%
Spanish mackerel	20.97%	9.43%	1.50%
Mackerel	18.77%	8.21%	1.40%
Lake trout	18.22%	11.38%	1.26%
Brook trout	18.97%	2.10%	1.21%
Halibut	18.35%	5.18%	1.05%
Black bass	21.05%	2.44%	1.24%
Red bass	16.68%	0.53%	1.23%
White perch	19.03%	4.07%	1.19%
Yellow perch	18.49%	0.70%	1.29%
Red snapper	19.20%	1.03%	1.31%
Sturgeon	17.96%	1.90%	1.43%
Smelt	17.36%	1.80%	1.68%
Cod fish meal	74.46%	1.00%	5.41%
Smoked haddock	33.68%	0.17%	1.53%
Smoked herring	36.44%	15.82%	2.06%

The consumption of raw meats should be discouraged on account of the danger of transmission of animal parasites which are only destroyed by a temperature of 160° F.

In roasting meat, certain chemical changes take place which not only improve the taste but its digestibility, largely because the connective tissue is converted into gelatin and the liberated muscular fibers are more readily acted upon by the digestive fluids.

Broiling produces very much the same changes, except perhaps a more complete retention of the juices, extractives and salts. Fried meats are usually objectionable, unless they have been dropped into very hot fat, in which case coagulation of the albumin not only prevents excessive absorption of fat, but also the exudations of flavor and juices.

BOILED MEATS AND BROTHS.—Boiling water coagulates the albumin, transforms the connective tissue into gelatin and dissipates the coloring matter, but as the water penetrates, it abstracts some of the newly formed gelatin, extractives and salts, also some of the fats and proteids. The loss thus sustained depends upon whether the meat has been placed in boiling or cold water. If we wish to retain the juices and flavor in the meat, it should be plunged in boiling water, as the rapid coagulation of the albumin will prevent excessive exudation. If, on the other hand, we desire a rich broth, the meat should be placed in cold water and kept at a temperature below 160 degrees. The loss sustained in extractives, salts and water renders boiled meat less palatable and also somewhat tougher unless cooked at a temperature below 180 degrees, and it is therefore not so easily digested; the nutritive value of boiled meat, however, is not impaired and the objections referred to can be overcome by chopping and the addition of spices.

In stewing, the meat should be cut into small pieces placed in cold water and brought up gradually to a temperature of 180 degrees and kept there for several hours.

GRAVIES, on account of the large amount of fat and gelatin present, are liable to cause indigestion in feeble stomachs and are not suitable for the sick and invalids.

The meat peptones and meat juices, because of the presence of proteids, are doubtless of value in the treatment of disease.

SPECIAL CONCENTRATED MEAT PRODUCTS.—Meat powder or meat flour is made of lean beef cut into strips and dipped into very hot fat; after draining it is dried slowly in an oven and ground into very fine powder, one pound representing about four pounds of flesh. The nutritive value of these products is very high. Carne pura contains 68% of protein, and codfish meal 79%; their digestibility is also very good, they keep well and the price is moderate, but on account of their taste and odor they have not come into general use. Meat powder has been mixed with meal from the legumes, wheat flour and other farinaceous food in the form of biscuits or compressed cakes for use as an Army Emergency ration. The nutritive value of ham, bacon, sausage and other meat products is also very high.

Meat may be preserved by cold storage, by heat as in the canning process, by drying as in the case of jerked beef or venison, by smoking and pickling either in brine or vinegar. Chemical preservatives other than salt or vinegar should not be tolerated as we possess in cold storage and heat far more efficient and certainly less harmful preservatives.

MEAT INSPECTION.—In judging the quality and wholesomeness of meat, the color, consistency and odor are valuable points to be observed. Good beef has a bright red color and marbled appearance due to the presence of fat, it is firm yet elastic to the touch, moderately moist and has a characteristic beefy odor. Bull beef is usually of a darker color, mutton has more of a brownish red color, meat of immature animals is pale, watery and friable. Meat which has gone beyond the first stage of decomposition is soft and liable to pit or crackle upon pressure and emits an offensive tainted odor, especially when hot water is poured upon it. In pushing a knife to the hilt the resistance in good meat is uniform, while in putrefying meat some parts are softer than others and the tainted odor clings to the knife. In temperate climates the marrow remains solid for 24 hours and is of a light pink color; when it is soft, looks brownish and contains black points, the animal has either been sick or putrefactive changes have begun.

In connection with meat products, the possibility of ptomain poisoning, with symptoms of nausea, vomiting, diarrhea, cramps and depression, should not be overlooked. Similar symptoms have been observed after the eating of oysters, mussels, crabs, lobsters and milk. Oysters raised in sewage-polluted beds have been known to transmit the germs of typhoid fever. Diseases like anthrax, bovine tuberculosis, hydrophobia, foot and mouth disease, infectious enteritis, actinomyces, trichina and cystererci are transmissible to man through the meat supply. For all these reasons, hygiene demands not only a proper control of the meat-market, but also proper cooking, since nothing short of a temperature of 160 degrees will destroy these organisms.

MILK is an ideal food. The average composition of cow's milk is: protein, 4.50; fat, 3.00; sugar, 4.50; salts, 0.75; water, 87.25.

In keeping milk at ordinary temperature it rapidly undergoes changes which are brought about by the agency of microorganisms. One of the greatest dangers in milk is caused by impurities seen in the so-called milk sediments, which consist largely of excrementitious matter clinging to the teats and udder of the animal and which, owing to the presence of fecal bacteria, bring about rapid souring of the milk with the production of toxins such as tyrotoxicon, and these in turn give rise to cholera infantum and other gastro-enteric diseases.

The reaction of milk should be neutral or amphoteric, the amount of cream should not be less than 10% per volume, and the amount of total solids not less than 12%; of which at least 3% should be butter fat. Milk is not quite as digestible as meat, nevertheless from 89 to 92% is utilized; boiled milk is not as digestible as raw or pasteurized milk. (See also milk as a cause of disease, p. 99.)

Skimmed Milk is the residue after the cream has been removed; as it contains the other solids and is quite cheap, it should become a more popular article of food; the same may be said of cottage cheese.

Condensed Milk.—There are a number of brands in the market, all made by the evaporation of the water of the milk by moderate heat or in vacuum pans with or without the addition of sugar. In the plain variety the milk is condensed to about ⅓ or ¼ of its volume. As at present prepared condensed milk is unsuitable for infant feeding, because it contains an excess of the proteids and sugar and is deficient in fats. These objections can be removed by modifying the milk previous to condensation, so that the composition is as nearly as possible that of human milk; it then can be condensed to about one-third of its original volume and the proportions restored by proper dilution just before using it for infant feeding.

Whey is the serum or watery part of the milk which remains after the curds have been pressed out from the milk to make cheese. It is used in certain diseases and also as a food in very difficult cases of indigestion in infant feeding.

Milk Wines, like koumis and kefyr, are made from mares' or cows' milk respectively and are the products of a peculiar fermentation, combining alcoholic with lactic acid fermentations. These beverages, in addition to the normal constituents of milk, contain alcohol, carbonic acid and lactic acid and are of value in the feeding of invalids.

Buttermilk contains all of the constituents of milk except that the amount of fat and sugar is less. The presence of lactic acid imparts a pleasant taste, and as it contains most of the desirable nutrients and is moreover quite cheap, its use should be encouraged.

Cheese varies in richness according to the amount of cream used in its manufacture; they contain from 26 to 40% of fat, and 17 to 29% of protein and possess, therefore, remarkable nutritive qualities. If taken in reasonable quantities, 96% of the protein and 97% of the fat is digested.

It should never be taken in the form of toasted cheese. The richer cheeses, unless eaten quite sparingly, are very apt to produce dyspepsia.

BUTTER is formed by churning the cream of milk. The amount of butter in cows' milk is about 3.75 or 4% (i. e., about 4 pounds to the 100 pounds of milk). Butter contains about 84% of fat, of which nearly 97% is digested if taken in moderate quantities. Rancid butter is very liable to cause indigestion.

Process or renovated butter is the product of rancid or tainted butter which has been purified by melting and washing, and since it is sold far below the market value of butter, and possesses the same nutritive properties as fresh butter, its use should not be scorned.

OLEOMARGARINE is a mixture of oleo oil derived from the richest and choicest fat of the beef, neutral lard, butter, cream or milk and salt and in the cheaper grades cotton seed oil is also used. Oleo and neutral lard are the chief ingredients. These after melting are churned with cream or milk, salted and run through cold water, worked in a butter worker and placed in suitable packages and labeled according to the United States laws "Oleomargarine." If colored to resemble June butter it is subject to a special tax of 10 cents per pound. If sold uncolored the Revenue tax is only ¼ cent per pound. There is practically no difference in the nutritive value and the digestibility between butter and oleomargarine or butterine, and as it is sold for half the cost of butter, the writer, as a teacher of hygiene, has urged upon his students for years to bring the nutritive value of this food stuff to the attention of the public, and in the interest of the wage-earners to correct, as far as possible, the prejudice which has been created against its use, provided, of course, it is sold under its true name and at its real value.

EGGS.—Egg-albumin has the following composition: Albumin 13%, fat 0.2%, salts 0.6%, water 86%; yolk: vitellin 15.8%, lecithin 8.7%, nuclein 1.5%, fat 20.3%, salts 1.0%, water 51.8 %. Eggs raw or soft boiled or when stirred into hot soups are readily digested, about 97% of the proteids and 95% of the fats are utilized. Hard-boiled eggs are not readily digested and for people with feeble digestion the yolk of the egg stirred in soup should be preferred. The nutritive value of a single egg is equal to 37 grams of fat beef or 165 c.cm. of rich milk. Fish-eggs contain on the whole the same nutritive principles as chicken eggs only in different proportions.

VEGETABLE FOOD.

CEREALS.—Of all the vegetables the cereals stand at the head of the list. While the legumes contain more vegetable albumin, they cannot be

prepared in so many suitable ways and are more difficult of digestion
H. W. Wiley's analysis, based upon American grains, is as follows

	Moisture.	Proteids.	Fat and Ether Exts.	Starch.	Cellulose.	Salts.
Wheat	10.60%	12.25%	1.75%	71.25%	2.40%	1.75%
Rye	10.50%	12.25%	1.50%	71.75%	2.10%	1.90%
Barley	10.85%	11.00%	2.25%	69.55%	3.85%	2.50%
Oats	10.00%	12.00%	4.50%	58.00%	12.00%	3.50%
Indian corn	10.75%	10.00%	4.25%	71.75%	1.75%	1.50%
Buckwheat	12.00%	10.75%	2.00%	62.75%	10.75%	1.75%
Rice, polished	12.40%	7.50%	0.40%	78.80%	0.40%	0.50%

The following table (Uffelmann's) shows the average composition of different flours and cereals:

	Protein.	Carbohydrates.	Cellulose.
Fine wheat flour	11.0 %	74.9 %	.....
Fine rye flour	10.2 %	75.10%	.....
Fine cracked wheat	10.43%	75.95%	0.22%
Fine cracked barley	10.89%	71.85%	0.47%
Pealed barley	11.25%	70.64%	0.54%
Oatmeal	14.29%	65.73%	2.24%
Cornmeal	10.00%	71.00%	2.5 %
Buckwheat meal	10.71%	70.12%	1.04%
Rice	7.8 %	79.4 %	.....

The cereals are eaten only after a series of careful manipulations producing different grades of flour, varieties of breakfast cereals, etc. In the finest grades of flour nearly all the outer membranes of the wheat grain (bran) is separated; while this removes much indigestible matter it also removes some of the proteids and fats. On the other hand the nutritive material in bran is in a form quite difficult of digestion, and the experiments conducted by Professor Snyder in 1901 indicated that the available proteids in graham bread are not utilized to the same extent as in high grade white bread.

Wheat and rye flour, on account of the gluten present, are especially suited for the preparation of bread; preference should be given to properly baked yeast-bread, and next to the patent aerated bread, while the use of baking powders should be discouraged. Apart from the fact that yeast predigests in a degree the starchy matter, baking powders are often subject to shameful adulterations. Bread possesses decided nutritive qualities, the proportion of nitrogenous to non-nitrogenous matter being 1 in 7. Experience has shown that a male adult cannot digest over 750 grams, and a female over 600 grams a day. This amount would supply about 2/5 of the protein and 2/3 of the carbohydrates required in 24 hours.

When taken in proper quantities 95 to 96% of a light, spongy bread are digested. Toasted bread contains less water and hence more nutriment pound for pound. Crackers cannot take the place of bread. Gluten-crackers are suitable for diabetic subjects because they contain from 55 to 75% of protein, and only from 10 to 30% of starch.

The nutritive value of *vermicelli, macaroni* and the various *grits* used in soups and in the preparation of mushes may be materially enhanced by the addition of milk and cream.

LEGUMES are a most valuable class of food stuff on account of the great amount of vegetable albumin present and have very aptly been called the poor man's meat. The difference in nutritive value between the immature peas and beans, which are used as green vegetables, and the matured seeds is shown by the analysis of König, Atwater and Bryant:

		Proteids.	Fat.	Starch and Dextrine	Cellulose.	Salts.
Soja Bean		33.41%	17.19%	29.99%	4.71%	5.19%
Broad Bean		24.27%	1.61%	49.01%	7.09%	3.26%
Kidney Beans		23.21%	2.14%	53.67%	3.69%	3.55%
Peas		22.85%	1.79%	52.46%	5.43%	2.58%
Lintels		25.70%	1.89%	53.46%	3.57%	3.04%
				Total carbohydr.		
Green Peas	Atwater and Bryant	7.0 %	0.50%	16.90%	.....	1.00%
Canned Peas		3.6 %	0.20%	9.80%	.....	1.10%
String Beans, fresh		2.3 %	0.30%	7.40%	.....	0.80%
String Beans, canned		1.1 %	0.10%	3.80%	.....	1.30%

The digestibility of these vegetables depends largely upon the mode of cooking; they should not be cooked in hard water, as the lime salts form insoluble compounds with the legumin, and after cooking the outer membrane should be removed by straining, in which case about 88% of the nutritives are utilized. If they are old, they should first be soaked for 24 hours in cold water.

SUCCULENT VEGETABLES.—Almost all of the fresh vegetables, except potatoes and green peas, contain a great amount of water, cellulose and salts and therefore very little nutriment. They are rich in amido-compounds and their chief value consists in the fact that they supply the mineral salts in a very palatable and assimilable form.

Potatoes contain proteids 2%, fat 0.10%, starch 20%. The juice is a valuable anti-scorbutic. If over 600 grams of potatoes are taken daily some of the starch is liable to undergo fermentation. In sprouting solanin, a toxic agent, is produced; this is liable to cause nausea, vomiting and diarrhea. The nutritive value of potatoes can be improved by cooking them in their jackets and the addition of butter and milk; fried potatoes except in the form of Saratoga chips cannot be recommended.

String beans and green peas possess greater nutritive value than potatoes, carrots, beets, oyster plant, parsnips, radishes, turnips, pumpkins, celery, lettuce, squash, asparagus, tomatoes and cucumbers on account of the greater amount of vegetable albumin present. With the exception of beans and peas most of the vegetables are deficient in proteids but fairly rich in carbohydrates and are chiefly valuable for their salts and for the variety which they give to our food.

The different varieties of cabbage and spinach are anti-scorbutic agents, whilst lettuce and endive owe their refreshing taste to the presence of organic acids in the form of citrates, malates and oxalates. The efficacy of onions, wild artichoke, sorrel, scurvy grass, mustard, cress and lambs' quarters as anti-scorbutics should not be forgotten. The nutritive value of edible mushrooms is not greater than that of other fresh vegetables; they are not easily digested and have been greatly overrated as an article of diet.

Fruits, apart from vegetable fiber and juice, contain some soluble proteids, sugar, dextrose, lævulose, pectins, free organic acids, citric, malic and tartaric, and compounds of these with potassium, sodium and lime. The quantitative composition of some of the fresh fruits according to König is as follows:

	Proteids.	Free Acids.	Sugar and Pectin.	Cellulose.	Salts.
Grapes	0.59%	0.79%	26.32%	3.60%	0.53%
Cherries	0.67%	0.91%	12.00%	6.07%	0.73%
Peaches	0.65%	0.92%	11.65%	6.06%	0.69%
Pears	0.36%	0.20%	11.90%	4.30%	0.31%
Apples	0.36%	0.82%	13.03%	1.51%	0.49%
Apricots	0.49%	1.16%	11.04%	5.27%	0.82%
Plums	0.78%	0.85%	11.07%	5.41%	0.71%
Currants	0.51%	2.15%	7.28%	4.57%	0.72%
Strawberries	0.54%	0.93%	7.74%	2.32%	0.81%
Oranges	0.73%	2.44%	5.54%	1.79%	0.49%
Blackberries	0.51%	1.19%	4.44%	6.97%	0.48%
Raspberries	0.40%	1.42%	3.86%	8.10%	0.48%
Cranberries	0.12%	2.34%	1.53%	6.27%	0.15%
Huckleberries	0.78%	1.66%	5.02%	13.16%	1.02%
Dried grapes	2.42%	.....	62.00%	.....	1.21%
Dried apples	1.28%	3.60%	59.77%	4.99%	1.57%
Dried pears	2.07%	0.84%	58.80%	6.86%	1.67%
Dried plums	2.25%	2.75%	62.32%	1.52%	1.37%

Watermelons contain 92% of water, 0.4% of protein, 0.2% fat, 6.7% of carbohydrates and fiber and 0.3% of salts. There is nothing in their nutritive qualities to justify their popularity. Ripe bananas contain 20% of sugar, 2% of protein, 0.5% of starch and a little more of fat. Fresh figs are about equal in nutritive value to the banana; the dried fig contains 50% of sugar, 4% of protein, 3% of salts and about 13% of seeds and indigestible fiber.

Fruit contains very little protein, but the percentage of carbohydrates is considerable and on account of the organic salts and aromatics they are very refreshing and promote the action of the bowels and kidneys. Hard and very acid fruits are liable to produce diarrhea. Lemon and lime juice contain free organic acids, about 30 grains of citric acid to 1 ounce of the juice, and are excellent anti-scorbutic agents.

Shell fruits contain a great amount of nutritive material in the form of protein, fat and carbohydrates, as shown by the following table prepared by Uffelmann:

	Protein.	Fat.	Carbohydr.	Cellulose.	Salts.
Almonds	24.18%	53.68%	7.23%	6.56%	2.96%
Walnuts	16.37%	62.86%	7.89%	6.17%	2.03%
Chestnuts	5.48%	1.37%	38.34%	1.61%	1.72%
Bread fruit	3.99%	1.69%	67.67%	5.10%	1.69%

Hazelnuts have about the same composition as walnuts. The meat of cocoanuts contains about 70% of fat and the milk contains nearly 7% of sugar. Peanuts contain about 30% of protein, and 45% of fat, and hence enjoy a very deserved reputation. Chestnuts are quite indigestible in the raw state and should be either roasted or cooked. Roasting also aids in the digestion of peanuts and almonds.

Honey, sugar and *syrups* are food stuffs as they supply heat and energy in the system and also improve the palatability of the food. The same is true of jams and jellies; the latter delicacies should always be home made, as it is frequently the case that they are made from glucose, syrups and gelatin artificially colored and flavored. Indeed it has been shown that the refuse of fruit-canning establishments and such tasteless articles as summer squash, boiled white turnips and clover seed are transformed into commercial jams.

COMBINATION OF FOOD.

A question of considerable importance is, whether the needs of the economy shall be supplied with an animal, vegetable or mixed diet, and the answer is plainly in favor of a mixed course. In the first place, the structures of our teeth and digestive tract plainly indicate that we occupy an intermediate position between the carnivora and herbivora. In the second place if we were to supply the needs of protein in the system exclusively from the vegetable kingdom, we would have to introduce an excess of carbohydrates, i. e., about 1,800 grams of bread or rice or 6,000 grams of potatoes; on the other hand, in order to supply the requirements of carbon from the animal kingdom, we would have to eat about 7,000 grams of meat containing 5% of fat or drink 6,000 grams of milk. Such quantities cannot be taken for any length of time without creating intense disgust for food and causing serious systemic disorders. For these reasons alone a mixed diet should be preferred. Moreover, Uffelmann has shown that the recruits of a Prussian infantry company, between the ages of 21 and 22 years, made their best gains while subsisting on 39 grams of animal and 71 grams of vegetable proteids and concludes that this proportion is, physiologically speaking, the proper one. Indeed an exclusive animal diet is liable to produce gout and diseases of the arteries, kidneys and liver, and health suffers whenever 75% or more of the proteids are supplied in the form of meat or eggs; probably on account of the crystalline waste products in the blood.

Food should be combined so as not to tax the digestive organs. Thus, for example, milk is not well borne with acid fruits, and the digestibility of eggs is impaired by large quantities of fluids. The condiments and relishes should not be wanting, and monotony in diet should be avoided. The foundation of a suitable diet will, however, be found in meat, milk, butter or fat, bread, rice or potatoes.

The amount of cooked meat should not be less than 160 grams and should not exceed 190 grams a day, or from 180 to 210 grams of fish. If the minimum amounts are taken, the deficiency should be supplied by 250 c.cm. of milk.

The daily requirements of fat are at least 25 grams of butter, oleomargarine or lard, or 30 grams of bacon, according to the taste and circumstances of the individual.

Bread is an indispensable article of diet and has long been called the staff of life; it furnishes a well-balanced ration of protein and hydrocarbons, but experience has shown that more than 750 grams per day cannot be tolerated, nor can more than 600 grams of potatoes be profitably consumed per day. It is very desirable that legumes and rice should take the place of some of the potatoes.

From our knowledge of the proximate constituents contained in the various food stuffs Diet Tables can be constructed which will meet the requirements of the body as well as the purse of the consumer. So, for example, a ration of bread, codfish, lard, bacon, potatoes, beans, milk, sugar and tea may be purchased for 15 to 20 cents which in actual food value is equal to the best hotel fare.

STOREROOMS AND PANTRIES.

The different methods employed in food preservation—such as cold storage, drying, salting, pickling and canning—have been briefly referred to and it remains to point out what may be done for the preservation of food of a perishable nature. When we realize that all fermentative and putrefactive processes are initiated by micro-organisms, we will appreciate the importance of absolute cleanliness and the creation of such environments as will preclude at least their rapid proliferation. For this purpose the food should be kept in dry, well ventilated and cool storerooms or pantries, located preferably in the basement, and away from contaminating influences, such as impure air, dust and other sources of infection. In summer the use of ice boxes or cold storage is quite essential to inhibit bacterial development, and food should be purchased in such quantities as to insure speedy consumption. It is perhaps unnecessary to say that food should never be kept in, or in close proximity to, living and sleeping rooms, or soiled linen closets, and yet this is not infrequently the case.

In order to prevent infection of the food by means of flies, the storeroom should be properly screened and it is also a good plan to use either filtered or boiled water for washing fruits and vegetables which are eaten raw. Persons suffering or recovering from communicable diseases should not be permitted to handle food for others. Food should never be placed in dirty pans or dishes, and great care should be exercised to prevent metallic contamination. For example, old milk pans may impart zinc, utensils made of tin, lead, or copper may contaminate fruit, lead or tinfoil may contaminate cheese; arsenical pigments have been known to contaminate the bread in green-painted bread boxes, or confectionery wrapped in colored papers.

PREPARATION OF FOOD FOR COOKING, ETC.

Prior to cooking, all raw materials should be thoroughly cleaned by soaking, rubbing, rinsing and wiping. This will render the food not only more appetizing, but also more wholesome, by the removal of adherent particles of dirt and micro-organisms. The same may be said of the removal of decayed or indigestible portions—such as the husks of legumes, the peelings of fruits, potatoes and other vegetables; and the removal of tendons and fasciae from meat. Chopping, grinding, and pounding renders meat and other articles more tender and accessible to the action of the digestive fluids. The addition of condiments improves the taste and digestibility, provided the food is not too highly seasoned. A high temperature secured by boiling, steaming, roasting or baking not only influences the consistency, taste, flavor, chemical constitution, digestibility and keeping qualities of food, but also destroys all parasites and microorganisms which may be present.

COOKING AND EATING UTENSILS.

Hygiene demands that all such utensils must be kept scrupulously clean; apart from the hygienic and esthetic aspect, food served in clean and attractive dishes tastes better and stimulates the appetite and digestion.

We have learned that, long before we knew of the existence of saprophytic germs and ptomain intoxications, the Hebrews paid special attention to the subject of clean cooking, eating and drinking utensils. We know from daily observation that unclean methods are a fruitful cause of disease (see p. 104, "Industrial Hygiene").

The shape of cooking utensils is of importance in the question of cleanliness; for this reason a flat bottom, with a quarter-round termination of the sides should be chosen. Earthenware pots and pans glazed with lead, or iron pots enameled with lead or zinc containing lead, should not be used. Britanniaware occasionally contains lead and should be tested. Utensils made of nickel impart a peculiar bitter taste to the food and drink, but are not otherwise objectionable. Copper and brass utensils must be kept polished to prevent the formation of copper salts. Food containing fat, chloride of sodium and ammonia compounds should not be permitted to cool in copper utensils, as the copper oxidizes at the level of the food and becomes soluble. Iron utensils impart a peculiar inky taste and greyish appearance to food, and should therefore be tinned or enameled. For all these reasons porcelain-lined or graniteware and the various steam-cooking utensils should be preferred.

The temperature of food and drink is not a matter of indifference; this is especially seen in the artificial feeding of infants. Iced drinks hastily swallowed are liable to cause neuralgia of the stomach, dyspepsia and even acute gastric catarrh; cold grapes and fruit are apt to produce colic and diarrhea. The bad effects of cold victuals have been frequently observed in persons obliged to eat cold lunches, and may be regarded as a frequent cause of intemperance.

Apart from the bad effects of high and low temperature upon the teeth,* we know that cold injesta also impair the action of pepsin and ptyalin, which are most efficient at about the body temperature. Hot food or drinks, apart from injuring the mucous membranes of the mouth and stomach, also interfere with the action of pepsin and ptyalin, which is completely arrested at a temperature of 140 degrees F. On the whole, we may conclude that the temperature of food and drink should be as nearly as possible that of the body-heat, and this should be the rule for infants. A temperature of 45 degrees may be regarded an extreme low and one of 120 degrees an extreme high temperature for the introduction of food.

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*Kober's Industrial Hygiene, p. 114.

The consistency of food exerts considerable influence upon our digestive organs; coarse and tough substances are less susceptible to the action of the digestive fluids, and consequently more difficult of digestion; this is especially true of many fibrous vegetables, of hard-boiled eggs and heavy, sodden bread. For infants, liquid food is the best form, but adults require a certain stimulus, not to be had in liquid food, and if taken for any length of time this is certain to disagree and create disgust. A semi-solid food has also been objected to because of the excess of water, which is believed to lower the tone of the digestive organs. These objections have been urged by physicians on behalf of prisoners, who, on account of insufficient exercise, can not very well get rid of the excess of water. This same objection does not apply to persons actively employed, and for whom a semi-solid food has indeed been found by experience the best suited to their wants.

VOLUME OF FOOD.

It is not sufficient to supply the required quantity of food, but it should also be introduced in such a volume as to satisfy the feeling of the individual and the capacity of the stomach.

From the results of experience and observation we may conclude that an adult of average weight and performing ordinary labor, in order to satisfy a feeling of contentment, requires from 1,600 to 2,000 grams (4 to 5 pounds of food) daily. Of this amount from 800 to 1,000 grams (2 to 2½ pounds) should be taken at dinner. These figures are simply suggestive, and as individual habits play an important role it will be well to guard against a sudden increase or diminution in the volume of food.

MEAL HOURS.

The daily allowance of food should be taken in divided meals. On account of the different habits and occupations it is difficult to formulate a rule for all classes. In a general way we may say that a healthy adult should eat at least 3 times and not oftener than 5 times day. The most rational dinner hour for a man who begins his labors at 6 or 7 o'clock in the morning is between 12 and 1 o'clock, for he will then be in need of food and if he defers his principal meal till evening he will be so tired that he can neither enjoy nor fully digest it. Such persons should eat a good breakfast, a full dinner about noon, and a supper between 5 and 6 o'clock. If their appetite for an early breakfast is poor, they should eat a light lunch about 9 o'clock A. M. and a similar lunch between 8 and 9 P. M. For persons not engaged in active muscular work it is desirable that they should eat a light breakfast, a hot lunch at noon, dinner at 5 o'clock and some light lunch between 8 and 9 P. M.

Unfortunately, we possess as yet no reliable data, as regards the requirements of food for men who, while leading a sedentary life, perform a great amount of brain work. Some authorities claim that mental, like physical, labor increases the amount of carbon consumption, but not of nitrogen. Others insist that since the brain and nerve tissues contain the elements of nitrogen and phosphorus which occur in the protein compounds, they should be especially concerned in building up brain and nerves and keeping them in repair. The general impression, however, is that people whose work is mental rather than physical eat too much, especially fat and carbohydrates, and that the ordinary subsistence diet composed of 100 grams of protein, 56 grams of fat and 450 grams of carbohydrates is best suited for their wants. The food for all persons of leisure should be selected with a view of preventing overtaxing the digestive tract, and the production of constipation with its attending evils, such as pelvic congestion, enlargement of the liver, hemorrhoids and chronic dyspepsia. The legumes, coarse vegetables and clarets should be avoided, but the use of light dry wines, fruits, and coffee instead of tea may be encouraged.

The importance of a good set of teeth for complete mastication and avoidance of bolting the food, in order to secure thorough insalivation, has already been pointed out; nor should we underrate the influence of our frame of mind upon this important physiological function. Every meal should be a feast; the food should be temptingly served and monotony avoided; relishes and flavors should not be wanting. Pawlow, in 1902, has shown that the primary secretion of true gastric juice is the result of a reflex starting in the mouth and that the relish of the food originates the reflex. In other words, he has experimentally demonstrated why certain tempting dishes, however inexpensive, "make our mouths water," and Hornborg in 1904 has shown that distasteful food fails to cause gastric secretion.

GOOD FOOD AT REASONABLE COST.

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The human body needs food, air, and water for its growth and maintenance just as do all living things. An engine can not run a machine or draw a train unless it has fuel, which is converted into energy or, as we say, which is used to generate power. In the same way the body must have fuel for the work of all sorts which it performs, for instance, for the work expended by a mason in laying stone, or by a carpenter in sawing or driving nails, by a woman who sweeps or does her housework, or by a child who runs or plays, and the body must also have fuel for the work which goes on inside it, such as the beating of the heart, or the movement of the chest when we breathe, a sort of work which is less often thought about and so less familiar to most of us.

Everyone knows that a large engine requires more fuel than a small one and that if the work is severe more fuel is needed than is the case when the engine is simply running and little or no work is done. It is the same way with the human body. A large vigorous man needs more food than a small child or a woman who is not more than two-thirds his size, and if a man or woman is engaged in severe work each needs more food than when idle, the need being manifested by "a better appetite." Age also has a decided effect on the kind and amount of food needed, an aged man or woman naturally requiring less food than a man in youth or middle life, since the daily tasks and the amount of work done gradually decrease until in extreme old age most of the time is passed in quiet. Soft foods and simple dishes are more suited to old age when teeth are few and body vigor is much less than in the prime of life than are the hearty foods which strong men and women need. The infant needs the mother's milk and later the simple foods—eggs, milk, bread, vegetables, cereals, fruits, etc., which are the best foods for childhood and are most certain to build up a vigorous body. As childhood passes, the mixed diet with which most of us are familiar is commonly followed and, all things considered, is doubtless the most satisfactory for ordinary persons in health. Such a diet is made up of vegetables, fruits, flour and other products from cereal grains, meat, fish, dairy products, eggs, and so on.

Many persons have an idea that there is some special food, some ideal diet suited to each kind of work and to every condition of life and that if we possessed full knowledge of the subject it would be desirable to prescribe the daily fare with the same care and accuracy with which a physician prescribes his medicines, but this does not seem to be the case. We do not regulate with such exactness the work we do, the leisure we take, the amount of clothing we wear, and all other conditions of our daily lives, and so it is for our best interest simply to regulate our diet along general lines in accordance with good sense, economy, and the knowledge which has been gained from a scientific study of the subject, taking care that the different foods are so combined that all the needs of the body are provided for, that excessive waste is prevented, and that both undernourishment and excess or overeating are avoided.

It is essential that foods should be of good quality, clean and wholesome, and that they should be well cooked. The dishes that are most relished and the methods of preparing them will vary in different countries and in different regions of the same country, for each race, and indeed each region, has its favorite foods and its special methods of cookery. However, when the question of food is carefully studied we find that value of the diet expressed in scientific terms is practically the same the world over when we consider persons of like size and weight performing equal amounts of work. This means that just as an engine of a given size would require in China the same amount of fuel for a given work which would be needed in the United States, so the human machine in any part of the world requires the same amount of fuel, that is, food, for a given task which would be required in any other region.

With the engine it is immaterial whether the fuel be wood, coal, or anything else which is convenient provided the quality is satisfactory and the engineer knows how to use it. With the human machine it is something the same. All ordinary foods are useful when rightly combined and each country will naturally make use of the food supply which may be most easily and economically produced.

A study of the various materials which are used as food shows that they are composed of comparatively few constituents, namely, water, mineral matter, starch, sugar, and other bodies which are called carbohydrates, fat, and nitrogenous material commonly called protein, such as the white of egg and the lean of meat. The human body is made up of the same constituents. All of the body tissues contain the nitrogenous material, protein, which is similar to that found in the lean of meat, the white of egg, in gluten of wheat, etc., and so it is understandable that the body must be supplied with food containing nitrogenous material enough for forming this tissue and for replacing any which, like the skin, finger nails, etc., may be worn away by the various conditions of our daily life and also for other purposes for which the body requires protein. In the case of the infant the nitrogenous material needed for body growth is supplied by the milk—a food comparatively rich in this constituent as well as in the other nutrients. Later in life the nitrogenus material is supplied largely by milk, cheese, eggs, meat, cereals, beans and similar foods.

As has been said, men, the world over, of like size and performing like amounts of work apparently eat practically the same amounts of food when considered from the standpoint of its composition, and students of nutrition questions are very generally of the opinion that this fact is more than a coincidence and that these average quantities eaten actually represent average needs. Values deduced from such observations are commonly referred to as dietary standards, that is, guides for food management.

Expressed in its simplest terms, the dietary standard for a man of medium size, say 150 pounds in weight, in good health and performing a moderate amount of work, calls for 100 grams (or 3.5 ounces) of nitrogenous material (protein), and fat and carbohydrates enough to supply with the protein 3,500 calories of energy in the amount of food provided per day. There is always some waste in cooking and serving food and if we consider the food purchased the values are 115 grams protein (4 ounces) and 3,800 calories. These terms are unfamiliar to most persons and it is unfortunate that some terms which are more familiar can not be found, but it is true here as everywhere else that each subject requires its own terms. We can measure cloth by the yard or milk by the quart, but we must measure work by horsepower or electricity by terms which are even less familiar. Fortunately, in the case of food and diet the matter can be explained in other ways so that the results can be applied in home management without undue difficulty.

The housekeeper who wishes to estimate the nutritive value of the food she prepares, in order that she may conform with the suggested dietary standards, can readily do so by the use of such a table as the one here given, which shows the protein and energy value of the portions ordinarily served of the more common food materials, the values given being approximately only as it would be hardly desirable to state absolute figures for such a purpose as that for which the table is designed.

The weights of the food portions included in the table are given in both grams, the unit of weight commonly used in scientific work, and in ounces, the more common household unit. To avoid unusual fractions of an ounce the nearest ½ ounce or ¼ ounce or some similar common fraction is used instead of more accurate equivalents.

In such a table the protein content of the food gives an idea of its relative value for building body tissue. The value of the food as a source of power for carrying on work is expresed by the energy it supplies when utilized in the body as fuel is burned under a boiler, and is measured as calories. A calorie is equal very nearly to 1.54 foot-ton, that is, it represents force which would be sufficient to lift one ton 1.54 feet and is a more convenient unit for such purposes than horse-power or other similar unit.

APPROXIMATE WEIGHT AND NUTRITIVE VALUE OF AN AVERAGE PORTION OF SOME COMMON FOODS.

Kind of Food.	Average wt. of portion.		Average bulk of portion.	Protein.	Energy.
	Grms.	Oz.		Grms.	Cal.
1 slice of roast meat	85	3	....	13	197
1 portion of meat stew	325	11	saucerful	32	461
1 Frankfurt sausage	60	2	....	11	170
1 pork chop	190	7	....	46	765
1 slice of boiled bacon	100	3½	....	15	432
1 portion of fried bacon	50	2	....	11	252
1 portion of steak	100	3½	....	26	411
1 portion of meat soup	190	7	cupful	7	50
1 portion of pea or bean soup	190	7	cupful	7	70
1 cup or glass of milk	225	8	½ pint	7	170
1 cup or glass of skim milk or butter milk	225	8	½ pint	7	85
1 portion of cream	65	2	½ gill	2	130
1 egg	50	2	....	7	96
1 portion of butter	10	½	I inch cube	....	95
1 portion of cheese	20	2-3	....	5	94
1 baked or boiled potato	140	5	med. size 3 in. long	4	145
1 portion of turnip, beet, carrot, or similar vegetable	130	4½	saucerful	1	80
1 ear of green corn or 1 portion of stewed corn	75	3	saucerful	2	82
1 tomato or 1 portion of stewed tomato	95	3½	saucerful	1	25
1 serving of cooked spinach, cabbage or other green vegetable	125	4½	saucerful	2	40
1 portion of baked beans or black-eyed peas	200	7	saucerful	16	300
1 slice of bread	50	2	4 x 4 x 1 inch	4	175
1 portion of corn bread	50	2	3 x 3 x 1 inch	4	142
1 slice of cake	50	2	4 x 2 x 1 inch	3	190
1 slice of apple or other fruit pie	150	5	1/6 of a pie	6	440
1 cup of flour	225	8	½ pint	19	950
1 teaspoonful of sugar	10	½	....	....	40
1 cup of sugar	225	8	½ pint	....	890
1 portion of sirup or molasses	75	2½	about ½ gill	....	200
1 portion of cooked cereal	200	7	saucerful	4	170
1 portion of dry ready-to-eat cereal	50	2	saucerful	6	200
Milk for cereal	25	1	½ gill	1	40
1 portion of boiled rice	140	5	saucerful	4	155
1 portion of rice pudding, bread pudding, or similar custard pudding	175	6	saucerful	7	300
1 portion of cherry roll or similar pudding	175	6	slice	8	460
1 apple or pear	100	3½	....	....	50
1 banana	100	3½	....	....	70
1 orange	125	4½	....	....	50
1 peach or 2 plums	75	2½	....	....	35
1 portion of stewed prunes	100	3½	saucerful	1	115
1 portion of preserves	65	2¼	saucerful	....	150
1 portion of fresh berries	100	3½	saucerful	1	35

The table may be conveniently used by supposing that the food eaten by one member of the family will represent in character and amount the food for the entire family. To estimate by means of the table the food value of the diet the portions of each article used at each meal should be set down in order, together with the protein and energy which each supplies and the total sum of the protein and of the energy will represent the amount eaten in the whole day.

Suppose, for instance, that breakfast for the man of the family, a mechanic whose work calls for a medium expenditure of physical strength, consists of two slices of bread, one portion of butter, a potato, two cups of coffee and two eggs. Each slice of bread, as the table shows, supplies 4 grams protein and 175 calories. Two slices would therefore supply 8 grams protein and 350 calories. A portion of butter supplies 95 calories of energy. Butter, as will be noted, contains no protein. One potato would supply 4 grams of protein and 145 calories; two eggs 14 grams protein and 192 calories. Tea and coffee in themselves supply so little nutritive material that they may be neglected. The sugar and cream, however, which would be used should be taken into account. If in each cup of coffee a teaspoonful of sugar is used the amount for two cups would of course be two teaspoonfuls and the energy value 80 calories. As the table shows, sugar contains no protein. When ¼ gill of cream is used for each cup of coffee ½ gill will be used for two cups and according to the figures in the table would supply 2 grams protein and 130 calories. If these foods eaten at breakfast and the protein and energy which they supply are set down in order and the quantities added together, the total shows the amount eaten for breakfast as follows:

FOOD VALUE OF BREAKFAST.

	Protein. Grams.	*Energy.* Calories.
2 slices bread	8	350
1 portion butter	0	95
1 potato	4	145
2 eggs	14	192
2 cups coffee	0	0
2 teaspoonfuls sugar for coffee	0	80
½ gill cream for coffee	2	130
Total	28	992

In the day's ration which has been selected we will suppose that the man carries his lunch and that it consists of two sandwiches (made from four slices of bread, one portion of butter and two portions of cheese), a slice of cake and a banana, and that for dinner he has one portion of beefsteak, one potato, one serving of turnips, an ear of corn, one slice of bread, one portion of butter, a dish of rice pudding and one cup of tea with sugar and milk. Following the same method as was used in computing the value of breakfast, the lunch would supply the following:

FOOD VALUE OF LUNCH.

	Protein. Grams.	*Energy.* Calories.
4 slices of bread for sandwiches	16	700
2 portions cheese for sandwiches	10	198
1 portion butter for sandwiches	0	95
1 slice cake	3	190
1 banana	0	70
Total	29	1253

The protein and energy value of dinner computed in the same way would be as follows:

FOOD VALUE OF DINNER.

	Protein. Grams.	*Energy.* Calories.
1 portion beefsteak	26	411
1 potato	4	145
1 portion turnips	1	80
1 ear corn	2	82
1 slice bread	4	175
1 portion butter	0	95
1 dish rice pudding	7	300
1 cup tea	0	0
1 teaspoonful sugar for 1 cup tea	0	40
¼ gill milk for 1 cup tea	1	20
Total	45	1348

The total protein and energy of the food eaten by the man during the day would of course be the sums of the amounts for breakfast, lunch and dinner, as follows:

FOOD VALUE OF DAY'S RATION.

	Protein. Grams.	*Energy.* Calories.
Breakfast	28	992
Lunch	29	1253
Dinner	45	1348
Total	102	3593

As will be seen from the figures given above the total protein for the day's ration is 102 grams or 3 2/3 ounces, and the total energy value 3,593 calories, values which correspond very closely with those called for by the suggested dietary standard. If a little more or a little less food were eaten these figures would vary somewhat though the agreement might still be reasonably close. Suppose, for instance, that another portion of cheese had been used in making the sandwiches. This would have added 5 grams of protein and 94 calories, making the total amount 107 grams protein and 3,687 calories. Such variations are of course what might be expected and are of no particular moment. It is by no means necessary that the food each day should agree exactly with the suggested dietary standard, for any deficiency in protein or energy one day will very probably be offset by an excess on some other day. It is believed, however, that the daily food will be most satisfactory when the average for long periods agrees with the suggested values. The calculated values obtained by the methods outlined above are designed simply to show in a general way whether the food corresponds to the dietary standard and to afford the housewife some knowledge as to whether the meals which she provides are sufficient as to the kind and amount of nutritive material which they furnish.

In the table on page 35 only the more common foods and staple dishes have been included. It will very often happen that other foods and dishes will be served. When this is done and it is desired to calculate the relative value of the ration no great error will ordinarily be involved if the values of the food most like the article in question are used. For instance, griddle-cakes or waffles, which are often served at breakfast, are not given in the table. A griddle-cake or a waffle so closely resembles a slice of bread in food value that the protein and energy for a slice of bread may be used to represent the food value of each griddle-cake or waffle served. In the same way an ordinary portion of boiled lamb may be assumed to have the same food value as a slice of roast beef and a portion of pork sausage the same food value as a Frankfurt sausage. If a housekeeper desires to study the subject in greater detail she will find an abundance of data regarding the composition of foods, etc., in bulletins of the U. S. Department of Agriculture and elsewhere.

In the calculations which have been described nothing has been said of the fact that women and children usually eat smaller amounts than men. Taking such factors into account would complicate the calculations, and it is therefore easiest to take into account simply the amounts which the man of the family eats and to assume that as the same sort of food is provided for the family each member will receive the proper amount, and that if a diet for the man corresponds reasonably to the dietary standard the same may be supposed to be the case with that for the other members of the family. Young children, of course, would have milk or special foods and so would be considered separately.

The ways in which meat, fish, vegetables, and other common foods can be prepared for the table are endless, ranging all the way from the simple boiled potato or fried egg to the most elaborate dish of the highly trained cook. The ideal for family living is enough variety in food and method of preparation to make the daily fare attractive without excessive cost or undue labor and it is possible to attain this ideal. It is just as possible to make a dinner pleasing and satisfactory in every way from simple materials simply cooked as it is to make appropriate and attractive clothing for a child or grown person from inexpensive yet suitable and well-chosen materials. It is the way in which it is done as much as the materials used. Anyone who works in a mill or factory with a complicated machine knows that many things must be learned before the machine can be intelligently managed and that much practice is required before he can become a skilled operator. The same is true of selection and preparation of food and other household tasks, but it is equally true that the skill and ability which comes from good training is just as valuable in the home as it is in the factory or workshop, and that the well-trained worker can accomplish better results with less trouble in a given time than the unskilled or poorly-trained worker.

If we look over the long list of foods which we use and the dishes we make from them, it becomes evident that they are of two general sorts—those which, like bread, rice, potatoes, and many other foods, have little distinctive taste, and those like cabbage, onions, cheese, sweet foods, and many other dishes, which possess a pronounced and characteristic flavor. It also becomes evident, when the subject is studied, that the foods which are used in greatest quantity belong to the former class.

A little butter and jam make a slice of bread something which a child will eat with relish. It is equally true that it is the foods and dishes of distinctive flavor which very largely at least make the daily fare appetizing and satisfactory and which insure the consumption of enough of the staple foods, many of them lacking in flavor, to make the diet well balanced and adequate. This distinctive flavor or palatability which is so desirable may, in general, be attained in two ways—namely, by the use of foods which are in themselves of distinctive flavor and by appetizing methods of cookery with proper seasoning.

The art of housekeeping in its highest form consists in planning the meals so that the two classes of foods are well balanced and the cost kept within bounds, as related to the income, with the labor involved not excessive.

Many housekeepers, since they have been well-trained in youth by their mothers or in other ways have learned how to be good home-makers, instinctively provide tasty dishes in about the right proportion to the bread, potatoes and other staple foods, and those who do not know how to do so should make the effort to learn. Such problems can often be solved by care and attention, and by means of schools and classes for home economics and the like, ways of good housekeeping are readily taught. For instance, if we assume that bread of some sort and coffee and some of the ordinary cereals are the usual breakfast dishes, and they doubtless are with the majority of families in this country, the needed variety is readily secured by bacon or creamed fish, fish balls, eggs, honey, sirup or other foods. If work is light and a hearty breakfast is not needed, fried potatoes (perhaps seasoned with onions), fried apples, or some similar dish is a palatable addition to creamed toast, cereal, or the bread and butter which makes up the principal part of the meal if that is not thought to be enough.

Tea and coffee as a part of breakfast or other meal owe their food value mainly to the sugar and milk or cream commonly taken with them. Cocoa in itself contains rather more nutritive material than either tea or coffee, but also owes its food value for breakfast or any other meal largely to the milk and sugar which are used in making it. It is usually considered more satisfactory for children than either tea or coffee. The value of milk as a beverage particularly for children must never be overlooked. Skim milk is not usually fully appreciated for this purpose. It is, of course, "thinner" or "less hearty" than whole milk as it has less fat (cream)—but is still a nutritious food—and though rather dilute, like all liquid foods, is well worth using in quantity.

When the man of a family takes his lunch away to his work something should be provided which is palatable as well as capable of satisfying hunger. Cold meat, a little smoked fish, or a chopped boiled egg will make a sandwich which is more palatable and more nutritious than plain bread and butter, and cheese of different kinds, cold bacon, and many other things may be used in the same way, while an apple, a banana or a piece of cake or something similar will undoubtedly be relished as much as the hearty food. If the children come home from school they and their mother should have something which is suited to their needs and yet which does not involve too much trouble. Bread and milk, or cereal and milk, with fruit, fresh or cooked, are all simple and easily prepared dishes which are suitable for the purpose, while bread and butter with a little cold meat, fruit, tomatoes or any left-over foods which are relished will also answer the purpose.

The evening meal under such circumstances would naturally be the heaviest meal of the day. If dinner is eaten in the middle of the day and supper at night the suggestions made for lunch may be applied to supper, but some hot dish is an addition which most persons relish for supper. Creamed chipped beef, hash, meat croquettes, oysters in season, and similar dishes suggest themselves, but if so hearty foods are not wanted, creamed potatoes, corn chowder, fried tomatoes, and others may be readily prepared.

When roast beef, which is usually an expensive dish, is the principal item of a dinner, the cost of the meal may be kept within reasonable limits by serving inexpensive vegetables and dessert. Any meat left over from the roast should be used for some other meal, either cold or made into a meat pie, meat croquettes, hash or some other made dish, while any bones and scraps made into a well-seasoned thick soup may form the principal dish at still another meal.

Hamburg steak, round steak, ham and sausages are meats which may be readily cooked and which are appetizing, while pork chops have always been a favorite and are usually considerably less expensive than similar cuts of beef or lamb.

Herring, mackerel, and other sorts of fish, when in season, make a pleasant variety and are as nutritious as meat. Perhaps fish is most commonly fried, but boiled fish with a well-made sauce, or fish stuffed and baked, is as easily prepared and adds variety.

Custom has made it almost compulsory in this country to have some sweet dish at dinner, and the custom is reasonable, as such foods are palatable and, although badly made pastry and other desserts are frequent causes of digestive disturbances, such dishes when well made, and eaten at suitable times in reasonable quantity, are generally conceded to be wholesome and are reasonably nutritious.

A housekeeper who plans her meals rationally will serve a light dessert like stewed fruit with or without simple cakes or cookies, a simple rice pudding, or some similar dish with a hearty meat, and the heavy puddings, such as apple dumplings, suet pudding, etc., when the rest of the dinner is not so hearty.

Beets, cabbage, onions, carrots, spinach, green corn, tomatoes—indeed all the ordinary vegetables are wholesome, valuable foods—and should be used liberally. They contain a good deal of water and are bulky in proportion to their nutritive value, but this is in their favor. By care and thought in selecting and by different methods of cooking vegetables and other foods it is easy to vary the dinner from day to day without too much labor.

When most fresh vegetables are out of season or high in price, hominy, rice, fried corn meal mush and similar dishes are pleasant changes from canned corn, canned tomatoes, and other canned goods which are so much used to supplement potatoes, the standard vegetable in most American homes, and which, when of good quality, are useful foods.

Fresh fruits are always attractive additions to the diet and may be made to furnish a considerable amount of nutritive material. Canned fruits, jams, jellies and the like are all valuable additions to the diet, useful for their nutritive value and for their palatable flavor.

In earlier times in New England creamed salt codfish with baked potatoes, boiled salt salmon with drawn butter, boiled salt codfish with beets and boiled potatoes, and pork and beans were simple, inexpensive, and appetizing dinner dishes which were very commonly used. These foods are wholesome, nourishing, and have always been favorites in large numbers of families. Fried salt pork or bacon, well cooked, with cream gravy, and served with fried eggs and baked potatoes, is another old-fashioned dinner which retains its popularity, particularly in rural regions. Some such dish as this with hot corn bread, some vegetable which is in season, and a rice pudding or some other simple dessert makes a meal which is appetizing, adequate, easily prepared and not expensive.

In the southern States hominy and rice, like corn breads of different sorts, have always been favorite dishes of reasonable cost. Corn bread and buttermilk is an old-fashioned combination which is well worth more extended use, for it is nutritious, wholesome and to most people palatable.

The dishes and food combinations which have been mentioned are only suggestions, for each housewife must of necessity suit her meals to the tastes of her family, and food customs differ decidedly with regions and with other circumstances. The southerner will relish bacon and greens, fried chicken, corn bread, and many other dishes for which southern cooks are famous, while the northerner will perhaps prefer fish-balls, baked beans and brown bread, or "a boiled dinner" of corn beef with vegetables, or some similar dish with which he has always been familiar. Families of Italian origin or descent naturally use macaroni, which they cook in such appetizing ways with tomatoes, cheese, or other seasoning, salads with an abundance of olive oil, and other dishes which are typical of Italy, while the Germans will more commonly select noodle soup, pork cutlet with cabbage or sauerkraut, apple cake and many of the other characteristic and appetizing German dishes.

Readiness to adopt new ideas is characteristic of American life and, as might be expected, many of the typical dishes of other countries have become well known on most tables, and this may well be the case for, after all, the staple foods which are always in market and reasonable in price are not too numerous and new methods of cooking mean a pleasant variety.

In general, it is true that to be reasonable in cost usually means that more time is required for the preparation of a meal or a dish than is the case when cost is not taken into account. A steak or chop which can be quickly cooked is more costly than a stew, than beef or veal loaf, beef à la mode, pot roast, beef with horse radish, boiled mutton with white sauce, or any of the other appetizing dishes which can be made from the cheaper cuts of meat. The stew owes its palatability very largely to the onions or other seasoning, or to the fact that the meat was browned in a pan before it was stewed, and its pleasing texture to the long, slow cooking which makes tough meat tender. The steak or chop is in itself more tender and full of flavor than cheaper cuts, so it is reasonable that a simpler method of cooking is required for it. That such dishes as stews, etc., are very generally relished by people in all circumstances is shown by the fact that they so often appear on menus in expensive hotels and restaurants, as well as those where prices are cheaper, though more often as luncheon than dinner dishes, and find their way to most tables—no matter how large or how small the income.

Granting that the foods are wholesome and suitable, the final test with foods, after all, is skill in preparation. The simplest dish well cooked is always superior to an elaborate dish indifferently made and simple meals in the long run are more relished than those which are very elaborate.

The housekeeper who manages her home with little or no help except that which other members of her family give has no time to waste on the entrées, elaborate cakes, and other sorts of "food fancy work" for which recipes are so frequently published and which many people seem to consider a mark of good living. It should be said that well-informed housekeepers long ago recognized that the majority of such dishes can not be satisfactorily prepared except by an unusually skilful cook and that, though entirely appropriate for special occasions and under many circumstances, they have little place in the every-day bill of fare. Furthermore, most persons tire of such dishes much more quickly than they do of foods prepared by simpler methods.

As time has progressed very many household industries have become the subject of careful study with the result that they now rest on a sound scientific basis.

The perfection which has been reached in spinning and weaving and other manufacturing enterprises, which have grown out of home industries, is a proof of what may be accomplished by a scientific study of domestic problems and an indication of what may be expected when careful consideration is given to food and nutrition as a part of home work by all housekeepers.

In the development of labor-saving devices household work has not kept pace with farm work or with general manufacturing. However, at the present time new interest seems to have been aroused in this question, and dish washers, bread and cake mixers, and similar devices which are on the market and hay boxes or fireless cookers are becoming fairly well known. When such devices are found to be fairly satisfactory they should find a place in the home with the washing machine and the carpet sweeper as a means of lessening the labors of the housekeeper.

No carpenter can build a house or carry out even a simple enterprise without a plan and the better the plan the easier and more satisfactory will be the work, other things being equal. With the housekeeper the same is true. Thought and system are important time and strength savers. We do not need to live by rote, but simply to carry on the household tasks according to some definite plan which is flexible enough to permit of the variations made necessary by circumstances.

The housekeeper who will take advantage of opportunities to learn something regarding the relative nutritive value of different foods and their real worth as distinguished from their market value, and who understands good, sensible methods of cooking and serving food, and who will plan her meals and other household work so that unnecessary labor may be avoided, will be able to provide her family with a reasonable and palatable diet without undue labor or excessive cost. Thanks to its varied climate and soil, the United States produces all staple foods in great variety as well as the majority of those which are usually termed "luxuries," and for this and other reasons the food problem is a simpler one than is the case in many other countries where food materials are less plentifully grown and prices are higher. Good, substantial food, pleasing to the eye as well as satisfying the body, is within the reach of all, and when wholesome, well-prepared meals are the rule in our homes, and women's work in the household is carried on generally with the system and precision which were long ago introduced into the trades and manufacturing industries, then household work will be less a burden and the family will be healthier and better in every way.

FOOD AND HOME BETTERMENT.

Introduction by Geo. M. Kober, M. D.

In our sociological study of families in this city we found that 476 families, with an income of $500.00 or less, expended 43.68% of their annual income for food; 159 families, with an income of $500 to $600, 43.59%; 153 familes, with an income of $600 to $700, 41.40%, and 153 families, with an income of $700 to $800, 40.21% for food. The question of food, while of importance to all classes in its relation to health and efficiency, is of special significance from an economic standpoint in families with limited means. It has been well said that "half the struggle for life is the struggle for food." Many of the problems connected with the nutritive value of farm products and other foods, the preparation of food for the table, the digestibility, palatability and utilization of different food stuffs, the hygienic and economic aspect of the question have received careful attention in the nutrition investigations conducted by the Office of Experiment Stations, U. S. Department of Agriculture. It may be truly said that these investigations have been a constant source of information and inspiration to teachers of domestic science in public schools and colleges to settlement workers, persons in charge of charitable institutions, and others interested in the social betterment of their less resourceful neighbors. The work is of the utmost value, and, while much has been accomplished, it should be continued in the interest of home economics and home betterment.

It has been found, over and over again, that persons of limited means purchase food containing little or no nutriment, or select needlessly expensive kinds of food, or prepare a diet altogether too one-sided, and last, but not least, know little or nothing about the art of cooking, and thus impair not only the nutritive value of the food, but also the digestive functions and general health as well. In order to give housekeepers whose income is $1.50 a day an opportunity to prepare suitable dishes for a family of six—2 adults and 4 children—Miss E. M. Cross, of the McKinley Manual Training School, has prepared suitable menus for winter and summer use which it is hoped will stimulate interest in the subject. Miss Cross assures me that she has verified the market prices personally and that the food can be purchased at the figures given. For reasons already stated butterine may very properly replace butter in families with small means, and for hygienic reasons bread 24 hours old is really superior to fresh bread. The writer desires to emphasize the fact that beans, peas and lintels, containing, as they do, much protein, can replace from time to time the more expensive meat and egg ration.

The nutritive value of skim milk, buttermilk and cottage cheese, and the cheaper fish meats should also be more fully appreciated. To limit the expenditure for food, with an income of $1.50 to an average of 75 cents a day for a whole family, is no small undertaking and requires experience and judgment which are best obtained in our cooking schools. It is sincerely hoped that every girl will take a deep interest in matters of cooking and domestic economy. Every housewife should supply herself with scales and follow the general directions given in the cooking recipes with precision. All the quantities given are for a family of six, and reductions are made accordingly, remembering always that hard-working men and nursing or pregnant women, and convalescents from acute diseases, require a more liberal diet. If, in spite of good cooking, there should be evidence in any member of the family of malnutrition and impaired health it will be well to consult a physician. Miss Cross is entirely responsible for the following menus and cooking recipes and is entitled to the credit for whatever merit they possess.

MENUS FOR WINTER MONTHS.*

MONDAY: *Breakfast.*—Cost 18 cents. Hominy, skim milk, creamed hake, toast, butter, coffee.

Protein, 28 grams. Energy, 1,053 calories.

Dinner.—Cost 31 cents. Irish stew with dumplings, boiled rice, cold slaw, apple pie.

Protein, 54 grams. Energy, 1,711 calories.

Supper.—Cost 23 cents. Cottage cheese, bread, butter, molasses, tea.

Protein, 13 grams. Energy, 819 calories.

Total protein, 95 grams; total energy, 3,583 calories; total cost, 72 cents.

TUESDAY: *Breakfast.*—Cost 16 cents. Rice cakes (left over rice), kidney stew, entire wheat bread, coffee.

Protein, 44 grams. Energy, 1,176 calories.

Dinner.—Cost 71 cents. Corned beef, boiled potatoes, spinach, tapioca with milk and sugar.

Protein, 28 grams. Energy, 842 calories.

Supper.—Cost 10 cents. Fried mush, cold corned beef, bread, butter, tea.

Protein, 29 grams. Energy, 1,196 calories.

Total protein, 101 grams; total energy, 3,214 calories; total cost, 97 cents.

WEDNESDAY: *Breakfast.*—Cost 27 cents. Stewed prunes, meat cakes, corn bread, butter, coffee.

Protein, 23 grams. Energy, 771 calories.

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*For quantities of material to be used when not given in cooking recipes, see p. 55.

Dinner.—Cost 44 cents. Split pea soup, braised beef's heart, boiled cabbage (corn beef liquor), boiled onions, potatoes, apricot roll, vanilla sauce.

Protein, 56 grams.	Energy, 1,572 calories.

Supper.—Cost 18 cents. Corned beef hash, bread, butter, tea.

Protein, 29 grams.	Energy, 1,002 calories.

Total protein, 108 grams; total energy, 3,345 calories; total cost, 89 cents.

THURSDAY: *Breakfast.*—Cost 19 cents. Rolled wheat, skim milk, Potomac herring, corn bread, butter, coffee.

Protein, 26 grams.	Energy, 866 calories.

Dinner.—Cost 29 cents. Salt pork, potatoes, turnips, escarolle, apple butter, short cake.

Protein, 61 grams.	Energy, 1,530 calories.

Supper.—Cost 26 cents. Pigs' feet, potato cakes, bread, butter, coffee.

Protein, 23 grams.	Energy, 840 calories.

Total protein, 110 grams; total energy, 3,236 calories; total cost, 74 cents.

MENUS FOR SUMMER MONTHS.

FRIDAY: *Breakfast.*—Cost 26 cents. Corn flakes, skim milk, salt water trout, corn dodgers, coffee.

Protein, 28 grams.	Energy, 896 calories.

Dinner.—Cost 35 cents. Stewed tripe, boiled potatoes, stewed onions, raw tomatoes, bread, rice pudding.

Protein, 37 grams.	Energy, 1,175 calories.

Supper.—Cost 28 cents. Beef stew, corn cakes, butter, stewed apples, tea.

Protein, 41 grams.	Energy, 1,035 calories.

Total protein, 106 grams; total energy, 3,106 calories; total cost, 89 cents.

SATURDAY: *Breakfast.*—Cost 13 cents. Fried tomatoes, bacon, bread, butter, coffee.

Protein, 31 grams.	Energy, 1,054 calories.

Dinner.—Cost 97 cents. Boiled leg of mutton, boiled rice, green corn, summer squash, bread, gingerbread.

Protein, 32 grams.	Energy, 1,014 calories.

Supper.—Cost 23 cents. Cottage cheese, baked potatoes, raw onions, bread, butter, gingerbread, tea.

Protein, 25 grams.	Energy, 1,048 calories.

Total protein, 88 grams; total energy, 3,116 calories; total cost, $1.23.

SUNDAY: *Breakfast.*—Cost 23 cents. Boiled eggs, Potomac herring, corn bread, butter, coffee.

Protein, 35 grams.	Energy, 818 calories.

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Dinner.—Cost 19 cents. Chartreuse of mutton, tomato sauce, boiled potatoes, string beans, blackberries, milk.

Protein, 44 grams. Energy, 1,187 calories.

Supper.—Cost 14 cents. Rice muffins, baked tomatoes, apple butter, coffee.

Protein, 41 grams. Energy, 1,066 calories.

Total protein, 120 grams; total energy, 3,101 calories; total cost, 56 cents.

COOKING RECIPES FOR WINTER MENUS.

CREAMED HAKE. After freeing two pounds of the fish from bones and skin, flake it, then cover it with boiling water, put a cover on the pan and keep it on the back of the stove for ten minutes. Drain the water from it, then pour cream sauce over it and serve.

CREAM SAUCE. 2 T.* butter, 2 T. flour, 1 C.* milk, ½ t.* salt, ⅛ t. pepper. After melting the butter over steam, or on a cool part of the stove, add the flour and stir over the fire for one minute. Add the milk and the mixed salt and pepper, then stir the mixture until it thickens, after which cook over steam for ten minutes. Serve while hot.

IRISH STEW WITH DUMPLINGS. 1 lb. beef (brisket), 1 slice salt pork, 1 onion, 4 potatoes. Cut the meat into two-inch pieces, then dredge them with flour and brown them all over in the pork fat with the sliced onion. Cover the meat and onion with boiling water and let the mixture cook slowly on the back of the stove. In the meantime pare and dice the potatoes and boil them for ten minutes, then drain the water from them and add them to the stew when the meat is tender. When the potatoes are nearly done, put in the dumplings, pouring off the liquid, if necessary, so they will rest on the potatoes. Keep the pan closely covered and let the stew cook for ten minutes. Take out the dumplings, season the stew with salt and pepper and put it in the center of a platter, then place the dumplings around the edge.

DUMPLINGS. 1 pt. flour, ½ t. salt, 1 C. milk (scant), 3 t. baking powder. Make a soft dough and flatten it out half an inch thick, then cut into small rounds or mix softer and drop by the spoonful into the hot stew.

COLD SLAW. · ¼ lb. salt pork, 4 T. vinegar, 1 onion, 1 t. salt, 1/3 medium-sized head of cabbage. Put the pork into a pan with half a cup of water; let it boil until the water evaporates, then cook until the pork is brown and crisp. When the fat is cool add it to the rest of the ingredients and pour the mixture over the thinly sliced cabbage.

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*T, Tablespoonful; t, Teaspoonful; c, Cupful.

Apple Pie. 1½ C. flour, 1 t. salt, 8 T. drippings, about ¾ C. ice water. After sifting the flour and salt together add the shortening and mix by cutting together with a knife, add the water slowly, still mixing with a knife, until a dry, crumbly paste is formed, but all of the flour is moistened. Turn this out on a board without flour and, after rolling it into a thin sheet, turn the paste around and roll again. Continue this process until the materials are well blended and the paste is smooth. Keep in a cool place until it is quite firm. It is better kept over night.

Roll out one-half of the paste to fit the pie pan, cover this with a layer of apples which have been cored, pared and cut into thin slices across the core. Sprinkle with sugar and a little cinnamon. Continue to put in these layers until the pan is full, having it higher in the center than on the sides. Put on a cover of pastry, fasten the edges down, then trim the pie, holding the knife well under the plate. Make several openings on the top for the escape of steam, then bake it in a moderately hot oven until it is brown, about thirty minutes. Remove it at once from the plate and serve either hot or cold.

Corn Bread. 1 pt. meal, 1 t. salt, 1 T. fat from bacon, 1 t. soda, 1 pt. sour buttermilk. Pour over the meal enough boiling water to scald it. The meal must be moist, not wet. Add the shortening, salt and the soda, which has been mixed with a little cold water. Stir this until it is thoroughly mixed, then put in the milk. Bake it in a quick oven in shallow pans for about forty-five minutes. Serve at once.

Kidney Stew. Split the kidneys lengthwise in halves and trim off every bit of sinew and fat from the inside, then cut the kidney into small pieces. Put them in a saucepan and cover them with cold water, then heat the water until it is nearly boiling. Drain this water off and cover the kidneys again with cold water, then heat the water as before. Repeat this, thus making three treatments. Be careful each time that the water does not boil at all or the kidneys will be hard and tough. Discard all the water. Re-heat the kidney in a brown sauce, season it with salt and pepper and serve it.

Brown Sauce. 2 T. butter, 2 T. flour, 1 C. stock or water, ½ t. salt, ⅛ t. pepper. After browning the butter add to it the flour and brown this mixture, then add the stock or water and stir until it is thick. Season and add the prepared kidney. Serve at once.

To Boil Corn Beef. Wash the meat well and put it on in cold water. Bring slowly to simmering point and let it simmer thirty minutes for every pound of meat. If the meat is to be served cold, allow it to cool in the liquor in which it was boiled.

Tapioca with Milk and Sugar. Cover one cup of flake tapioca with cold water and let stand over night. In the morning drain the water from it and add a quart of hot water. Cook over a slow fire until it is quite transparent, then add a pinch of salt and the rind and juice of one lemon. Pour this into moulds which have been wet with water and keep in a cool place. When firm turn them out on a platter and serve with milk and sugar.

Fried Mush. 1 pt. water, 1 t. salt, ½ C. yellow meal, 1 egg. Scatter the meal slowly into the boiling salted water, stirring constantly, then let the mixture bubble once or twice. Place the pan over hot water and let it cook for two hours, after which turn the mush into a square pan and keep in a cool place until it is firm. Cut it into slices, half an inch thick, and cover them with the beaten egg which has been mixed with one tablespoonful of cold water. Cook these in smoking hot fat (enough to cover the pieces) until they are a golden brown. Serve at once. Note: Two saucepans may be used for cooking the mush, the smaller one resting on a piece of wire gauze in the bottom of the larger one, which contains water. The fat used is made from the small pieces of fat meat which may be purchased from the butcher at two cents per pound. The fat is strained and kept in a cool place for future use.

Stewed Prunes. After washing one pound of prunes, cover them with cold water and let them stand for several hours. Put them on the stove in the same water and let them cook slowly until a straw will go through them easily. Put the prunes in a dish, sweeten the liquid, let it boil for two minutes, then pour it over the prunes.

Note: All dried fruits should be soaked in the water before they are cooked.

Meat Cakes. 1 lb. beef, 1 t. salt, ⅛ t. pepper. Use the lower part of the round, which may be purchased in some markets for six cents per pound. Grind the meat or have the butcher chop it with a cleaver until it is quite fine, then mix the seasoning with it, and shape it into small cakes, having the edge as thick as the center. Put enough fat in a hot spider to keep the meat from sticking to the pan, put in the cakes and shake the pan over the fire until they are brown all over. Now let them cook more slowly, allowing seven minutes if they are an inch thick, turning them occasionally. After taking out the cakes, put into the pan one tablespoonful of drippings and the same amount of flour, stir well, then add half a cup of cold water and cook until it thickens. Season with salt and pepper and serve with meat cakes.

Split Pea Soup. 1 C. split peas, 6 pts. cold water, 1 onion, 2-inch cube salt pork, 2 T. drippings, 2 T. flour, 1½ t. salt, ⅛ t. pepper. After picking over the peas, wash them and let them soak in the cold water for five or six hours. Add the pork and onions which have been cut into small pieces and cooked until they are a light brown. Let this mixture cook slowly for about four hours, after which strain it, mix the fat with the flour and add to the soup, stirring constantly until the mixture thickens, then let it cook for ten minutes. Season and serve at once.

BRAISED BEEF'S HEART. After soaking the heart in cold water for three hours, remove the muscles from the inside and the blood. Make a forcemeat of one cup of bread crumbs, two tablespoonfuls of drippings, one teaspoonful of thyme, one tablespoonful of chopped celery tops, one teaspoonful of onion juice, half a teaspoonful of salt, one-eighth of a teaspoonful of pepper. Mix and stuff the heart. Tie it together with twine, and put it into a pan which has a close-fitting cover. Add enough boiling water to half cover the heart, put on the lid and cook in a moderately-heated oven for three hours. Brown two tablespoonfuls of fat, add two tablespoonfuls of flour, and when well mixed, add the water in which the heart was cooked. Stir until it thickens, season with salt and pepper. Dish the heart and pour the sauce over it, then serve.

APRICOT ROLL. 2 C. flour, ½ t. salt, 1/3 lb. suet, 1 pt. apricots. Free the suet from the fiber and skin, then chop it fine or press it through a wire basket. Mix this with the flour and salt and add gradually enough cold water to make a soft dough. Roll it out on a floured board into a sheet about an inch thick, spread the apricots thickly over the dough, roll it up and tie it in a well-floured cloth, leaving plenty of room for it to swell. Put it into a pot of boiling water and boil for two hours, or it may be steamed two hours and a half. Serve hot with vanilla sauce.

VANILLA SAUCE. 2 T. butter, 2 T. cornstarch, ½ C. sugar, 1½ C. water, 1 t. vanilla. After heating the butter and water to boiling point, stir in the mixed cornstarch and sugar. Cook the mixture for ten minutes, then flavor and serve.

CORNED BEEF HASH. 1 pt. finely chopped beef, 1 pt. boiled potatoes, ½ t. salt, ⅛ t. pepper, 2 T. fat.

Cut the potatoes into small pieces and mix them with the rest of the ingredients. Put this into a heated spider, add enough hot water to moisten and stir until the mixture is well heated, then pack it closely in the pan, cover it and let it cook until it is well browned on the bottom. Turn it out on a platter and serve.

APPLE BUTTER SHORT CAKE. 1 pt. flour, 1 t. salt, 3 T. drippings, 2 t. baking powder, milk or water (about ¾ C.).

Sift the flour with the salt and baking powder, then add the fat and mix well. Pour in the water slowly, mixing with a knife until a soft dough is formed. Turn it out on a floured board and, after surrounding it with flour, roll it into a thin sheet, about half an inch thick. Cut it into four-inch squares and bake them in a quick oven until they are a light brown, about twenty minutes. Split each square and put the apple butter between. Serve while hot.

PIGS' FEET. After scraping a set of four of the feet soak them in cold water for several hours, then wash and scrub them. Split the feet and put them on in cold water and let them simmer until tender. Put them in an earthern jar, season with salt and pepper and pour over them hot, spiced vinegar. They will be ready for use the next day.

SPICED VINEGAR. Boil for one minute a half pint of cider vinegar, 12 whole cloves, 3 inches of cinnamon bark and two bay leaves.

POTATO-CAKES. Mash 1 pt. boiled potatoes, then season them with salt and pepper and moisten with hot milk. Make into cakes and brown in a pan with a small quantity of fat. Serve hot.

RECIPES FOR SUMMER MENUS.

CORN DODGERS. 2 C. white meal, 6 T. skim milk, 2 T. shortening, 1 t. salt.

After scalding the meal with boiling water, using just enough to moisten the meal, add the shortening and stir until it is well mixed, then put in the salt and milk. Put the mixture by spoonfuls in a large baking pan, flatten into small cakes and keep them separate. Bake in a moderately heated oven until brown on both sides, then serve.

STEWED TRIPE. 2 lbs. boiled tripe, 2 oz. salt pork (ham may be used), ½ medium-sized onion, 1 T. chopped parsley, 1 bay leaf, 2 T. flour, 1 pt. milk, 1 t. salt, ⅛ t. pepper.

Cut the tripe into pieces about an inch and a half long and a half inch wide. Dice the pork and put in a pan with the sliced onion and the bay leaf. Stir over the fire until quite brown, then add the flour and when well mixed add the milk. Stir this until it is as thick as ordinary cream, after which put in the salt, pepper and the tripe, and keep over a very moderate fire for five minutes. Add the parsley and serve at once.

RICE PUDDING. ½ C. rice, ½ C. sugar, 1 pinch of salt, 1 qt. of milk.

After washing the rice thoroughly, let it soak in the milk for half an hour, after which add the salt and sugar. Pour the mixture into a deep pan, cover it and let it bake about two hours, slowly at first, until the rice has softened and thickened the milk, then let it brown slightly. This may be served hot or cold.

BEEF STEW. 1 lb. plate or brisket, 4 potatoes, 1 t. salt, 1 carrot, 1 T. fat, 1 T. flour, 1/8 t. pepper.

Cleanse the meat by wiping it with a damp cloth or by scraping it with the back of the knife. Cut it into pieces about two inches square, and put it into a saucepan with the bones and sliced carrot. Pour over this enough boiling water to cover well, about a pint and a half, and let it simmer until the meat is tender, then add the diced and parboiled potatoes. When the potatoes are done thin the mixed fat and flour with a little of the hot liquor from the stew, and after pouring it into the stew stir it until it thickens slightly. Cook a few minutes longer, then remove the bones, season and serve.

CORN CAKES. 1 pt. meal, 1/2 C. flour, 1 pt. sour buttermilk, 1 1/2 t. soda, 1 T. fat, 1 egg, 1 t. salt.

Scald the meal with sufficient boiling water to moisten, then put in the fat and stir until well mixed. When this is cool add the salt, flour and the buttermilk. Stir in the beaten egg and the soda, which is mixed with a little cold water. Bake in small cakes on a lightly greased hot griddle.

GINGERBREAD. 1 C. molasses, 1/3 C. drippings, 1 t. soda, 1/2 t. salt, 1 C. sour buttermilk, 1 T. ginger, 3 C. flour, 1 t. cinnamon, 1/2 t. allspice.

After mixing the salt and spices with the molasses add the fat, after which add flour and buttermilk alternately, then beat until perfectly smooth. Stir in the soda which is mixed with a little cold water and partly fill greased gem pans with the batter. Bake in a moderately hot oven about thirty minutes or until the cakes are a light brown.

CHARTREUSE OF MUTTON. 1 C. cooked chopped mutton, 1 t. chopped parsley, 1/2 t. onion juice, 1 t. lemon juice, 1/4 t. salt, 2 T. butter, 1 C. stock or water, 2 T. flour, little cayenne.

Make sauce as directed for cream sauce, then add the rest of the ingredients and mix thoroughly. Line a greased mold with hot boiled or steamed rice, having the layer about half an inch thick, then fill the center with the mutton mixture and cover the top evenly with rice. Steam forty-five minutes, then turn from the mold and serve with tomato sauce. The greased mold may be coated with bread crumbs, then lined with mashed potatoes and, after filling with the mutton, covered with potato. Bake.

TOMATO SAUCE. 2 T. drippings, 1 C. strained tomatoes, 2 T. flour, 1/2 t. salt, 1/8 t. pepper.

After melting the fat add the flour and cook for one minute, then add the strained tomatoes, the salt and the pepper. Stir until it thickens, then serve.

Scrapple. 4 pts. water in which the lamb was cooked, 1 lb. scrap meat, 3 t. salt, 1 t. thyme, 1 t. sweet marjoram, 1 pt. meal, ¼ t. pepper.

After cleansing the meat, by wiping it with a damp cloth, cut it into small pieces and cook it slowly in the mutton broth until it will easily separate. See that here is one quart of the liquid and that the meat is in very small pieces. Season the mixture of water and meat, put it on the stove and, when it reaches boiling point, stir in the meal. Cook over hot water for two hours, then add the thyme and marjoram and, when well mixed, turn it into square pans and stand away to cool. When this is firm cut it into slices and brown in a little fat.

Rice Muffins. 2¼ C. flour, 1 C. milk, ¾ C. hot rice, 1 egg, 5 t. baking powder, 2 T. butter or drippings, 1½ t. salt.

After mixing the flour with the salt add the rice, which has been pressed through a strainer, and the milk which is mixed with the beaten yolk of the egg. Beat until the batter is quite smooth, then add the melted fat, stir in carefully the baking powder and then fold in the stiffly beaten white. Partly fill greased gem pans with the batter and bake in a moderately hot oven until a light brown, about thirty minutes. Serve hot.

MARKET PRICE OF FOODS.

Winter.

Apples, 10 cts. ¼ peck.
Apple butter, 8 cts. jar.
Bacon (country), 10 cts. per lb.
Beef, part of the round, 6 cts. per lb.
Beef, brisket and plate, 6 cts. per lb.
Beef, corned, 6 cts. per lb.
Beef's heart, 8 cts.
Beans, 9 cts. qt.
Broken rice, 3¼ cts. per lb.
Bread (stale), 3 cts. loaf.
Butter, 30 cts. per lb.
Buttermilk, 5 cts. per qt.
Cabbage, 8 cts. head.
Coffee, 13 cts. per lb.
Corn flakes, 10 cts. pkg.
Cottage cheese, 6 cts. pt.
Escarolle, 3 cts. head.
Evaporated apricots, 10 cts. per lb.
Flake tapioca, 3 cts. per lb.
Flour, 6 lbs. 18 cts.
Hake, 5 cts. per lb.
Hominy, 4½ cts. qt.
Kidney, 8 cts. for one.
Meal, 2 cts. per lb.
Molasses, 8 cts. per qt.
Mutton, breast, 7 cts. per lb.
Mutton, fore leg, 10 cts. per lb.
Mutton, neck, 6 cts. per lb.
Pig's feet, 8 cts. set.
Potomac herring, 8 cts. doz.
Potatoes, 20 cts. per pk.
Prunes, 5 cts. per lb.
Rolled wheat, 10 cts. pkg.
Salt pork, 7 cts. per lb.
Salt water trout, 10 cts. per lb.
Sausage, 3 lbs. 25 cts.
Skim milk, 6 cts. qt.
Spinach, 10 cts. ¼ pk.
Split peas, 6 cts. lb.
Sugar, 5 cts. per lb.
Tea, 15 cts. per lb.
Tripe, 2 pounds 25 cts.
Turnips, 5 cts ¼ pk.

Summer.

Apples, 8 cts. ¼ pk.
Beets, 3 bunches 5 cts.
Blackberries, 5 cts. qt.
Butter, 20 cts. per lb.
Cabbage, 5 cts. per head.
Corn, 10 cts. per doz.
Eggs, 15 cts. per doz.
Onions, 3 bunches 5 cts.
Potatoes, 65 cts. bushel.
Spinach, 5 cts. per ¼ pk.
String beans, 5 cts. ¼ pk.
Summer squash, 5 cts. per doz.
Tomatoes, 3 cts. ¼ pk.

QUANTITIES OF MATERIAL TO BE USED FOR A FAMILY OF SIX WHEN NOT GIVEN IN COOKING RECIPES.

BREAKFAST.

Uncooked hominy, 1 C.
Skim milk, 3 gills.
Toast, *1 loaf.
Butter, *3 oz.
Coffee, 4 T.
Kidney, One.
*Same quantity each time used.

Stewed prunes, 1 lb.
Rolled wheat, 1 C.
Potomac herring, 3.
Corn flakes, 2 C.
Fried tomatoes, 8.
Boiled eggs, 12.

DINNER.

Uncooked rice, 1½ C.
Corned beef, 8 lbs. for 3 meals.
Potatoes, 12 3 in. long.
Spinach, ¼ pk.
Milk for tapioca, 3 gills.
Sugar for tapioca, 2 T.
Beef's heart, 1.
Boiled cabbage, ¾ head.
Boiled onions, 6.
Potatoes, 6.
Salt pork, 1½ lb.

Turnips (mashed), 8.
Potatoes, 6.
Escarolle, 1 head.
Raw tomatoes, 6.
Leg of lamb, 7 lbs. for 3 meals.
Rice, 1 C.
Corn, 12 ears.
Squash, 4.
String beans, ¼ pk.
Blackberries, 1 qt.
Milk, 3 gills.

SUPPER.

Cottage cheese, 1 pt.
Molasses, 3 gills.
Pig's feet, 1 set.
Potatoes, 8.
Apples, ¼ pk.

Cottage cheese, 1 pt.
Potatoes, 9.
Onions (raw), 6.
Tomatoes, ¼ pk.
Apple butter, ½ pt.

THE CAUSATION AND PREVENTION OF DISEASE.

DANGER PERIODS IN LIFE.*

According to a French Medical Journal the annual mortality of the entire human race is 33,000,000 of persons. A fourth of the race die before completing their 8th year, and one-half before the end of the 17th year, but the average duration of life is about 38 to 40 years. Not more than one person in 100,000 lives to be 100 years old. ("Medical Record," February 27, 1892.)

During life the fluids and tissues of the body are constantly undergoing changes; new matter is formed and the old is removed with ceaseless activity. The body is indeed a complex machine in which the law that force is generated by decomposition is fully carried out. Every motion of the body, every pulsation of the heart, nay even every thought is accompanied by the destruction of a certain amount of tissue. As long as food is supplied in sufficient amount and the assimilative functions are not disordered, reparation proceeds as rapidly as decay, and so long as these two actions exactly counterbalance each other, life and health, unless, of course, in case of accident, continues.

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*Carpenter, "Cyclopedia of Anatomy and Physiology," Vol. I, article "Age," "Hammond's Treatise on Hygiene."

The human body has been aptly likened to a machine, and it is said that every machine has a natural life, capable of doing just so much work, but after all our machine differs from an inorganic machine in the fact that it possesses the power of self-repair, and also that for a given time, say between birth and the 25th year, our machine increases in growth and efficiency; there is then another period, limited usually between the 25th and 35th year, during which the living machine maintains its fullest development and resistance, probably because regeneration and waste are exactly counterbalanced, and then comes the period of decline, reaching from the 35th year to the extreme limit of human life, when this natural resistance begins to fail and the tissues are not regenerated as fast as they are broken down. (Hammond.)

The various periods in the life of man are marked by certain peculiarities, and exhibit susceptibility to some diseases and immunity to others.

Statistics show that out of every 1,000 children born alive, 188, or over one sixth, perish before the completion of the first year. Of the twelve months during the first year of life the first month furnishes the highest mortality. This is due to the fact that a great many children, imperfectly developed at birth, die within a few days; the first month is followed by the second, third and fourth month, probably, also, because of diminished vital resistance; next by the twelfth month. This jump from the fourth to the twelfth month is quite suggestive, as it is the usual period of weaning, with its attending danger from digestive diseases incident to artificial feeding.

During the second and subsequent years the mortality gradually decreases, and of children between the age of 1 and 5 years there die annually about 37 out of 1,000, making a total loss during the first 5 years of 336 out of every 1,000 children born. If we stop to inquire into the immediate cause of the excessive mortality during the first 12 months, we find that about 40 per cent perish from diseases of the digestive system; about 21 per cent from affections of the respiratory organs; next in frequency are the infectious diseases like diphtheria, scarlet fever, measles, whooping cough, mumps, tubercular affections. Rickets, diseases of the nervous system, convulsions and inflammation of the brain and its membranes are also of common occurrence.

As the age of the child advances the body becomes more fully developed and better fitted to resist disease. The diseases to which the race is especially liable during the period extending from puberty to maturity, or about the 25th year, are those of the respiratory organs, tuberculosis, appendicitis and typhoid fever. Thus of 500 cases of typhoid fever analyzed by me, 327 cases were between the age of 10 and 25 years. It has been suggested that the undue prevalance of these diseases, as well as of mental and nervous affections during this period, may possibly be connected with a diminished power of resistance, the result of morbid sexual habits.

The diseases which are most frequently met with during the period of maturity, which ordinarily extends from the 25th to the 35th year of life, are consumption, gastric affections and rheumatism.

The period of decline has been stated to embrace the 35th year to the extreme limit of human life. This is scarcely exact, as in the majority of instances we observe a period varying from 5 to 10 years, during which the body remains at a nearly fixed point of development, before a disposition to degeneration is manifested. Indeed, during the first few years of actual decay the organism is so slowly affected that very little inconvenience results, and occasionally individuals may withstand the tendency to degeneration to a very advanced period of existence.

The diseases to which the period of decline is especially liable are apoplexy, organic diseases of the heart and blood vessels, of the liver and urinary organs. Gout and chronic rheumatism, pneumonia, bronchitis and a variety of nervous affections are also very common; while malignant diseases, especially in the female after the cessation of the menstrual functions, are not infrequent.

We have not attempted to answer the question, quite often asked, why the body, after reaching a certain point of development, ceases to grow? A question equally interesting and difficult is, "Why does the body, after reaching maturity, begin to degenerate?" It has been said by Hammond: "If it were possible to so adjust the repair to the waste that neither would be in excess, there is no physiological reason why life, if protected against accidents, should not continue indefinitely." But as this with our present knowledge is impossible, we should at least direct our attention to the removal of the factors which heretofore have interfered with the average span of life allotted to us. We know that with the advance of hygiene the average human life has been lengthened from 18 to 20 years in the 16th century to 38 to 40 years and over at the present time, and there is reason to hope that we may still further prolong our existence. Whilst much has been accomplished in the past, more remains to be done, and one of the pressing needs is an enlightened system of dietetics.

A long series of investigations on tissue metamorphosis have been conducted by the Department of Agriculture—but are now interrupted for lack of funds—with a view of determining what substances are necessary to repair a certain amount of waste. We are extremely careful in other machines to use only those substances for the generation of force which are proper, and no more than is absolutely necessary. In the human system little attention is paid to this question, and we eat without regard to the exact wants, and sooner or later disorganization results. Next, we want to be able to exercise all the organs of the body to that extent only which will insure their activity and the deposit of sufficient new material to keep them in a state of preservation, without leading to excess of the processes of either regressive or progressive metamorphosis.

THE CAUSES OF DISEASE.

The direct and exciting causes of disease have been a source of much study. Thanks to the progress of medical science the field is now limited to certain chemical, physical, mechanical and vital agencies capable of producing definite alterations of the tissues and fluids of the body and manifestations of disease. Among the chemical causes we recognize: First. Those originating without the body of an organic and inorganic character, commonly known as irritants or poisons, many of which have been referred to in connection with industrial pursuits. Second. Those originating within the body as a result of overeating, malnutrition, malfermentation and other defects in the physiological functions of the body. Some of these, according to Abbott,* "include the ordinary end-products, or waste matter of tissue activity, that have accumulated within the system as a result of defective accretory and excretory organs; while still others are the toxic products of malfermentations, often in operation within the alimentary tract." There is much reason for believing that the protein, when taken in excess in the food, undergoes putrefaction, and the absorption of these products gives rise to auto-intoxication by rendering the blood current impure. Herter, Comb and others have shown that such a condition produces various maladies and milder forms of indisposition, and Metchnikoff considers auto-infection the chief cause of premature old age. Among the most frequent physical causes of disease are excessive heat, cold and moisture,† while the mechanical causes include, of course, accidents and injuries of every description.

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*"Hygiene of Transmissible Diseases," 1899, p. 52.
†Kober's "Industrial Hygiene," p. 53.

VITAL CAUSES.

By the term vital causes we understand certain living animal and vegetable parasites capable of reproduction in the body, and under favorable conditions, of producing manifestations of disease. "It matters little whether the living organism is large or small, or belongs to the vegetable or animal kingdom, or whether it produces its effect in the skin, muscle, lympathics, internal organs, intestines, or in the blood, its introduction and reproduction constitute infection." (Sternberg.)

The writer does not pretend to differentiate between infectious and contagious diseases, except to indicate that all contagious diseases are infectious, but not all the infectious diseases are contagious. Smallpox, measles, scarlet fever, German measles, mumps and chicken-pox are notable contagious diseases. Erysipelas, pneumonia, tuberculosis, glanders and diphtheria, while not usually contagious, may become so under favorable conditions. Typhoid fever, cholera, yellow fever and common suppuration are given by Abbott as examples of non-contagious infectious diseases.

THE PREVENTION OF INFECTIOUS DISEASES.

One great peculiarity of most of the infectious diseases is that they usually occur in groups, for it rarely happens that isolated cases of diphtheria, scarlet fever, measles, etc., develop unless special precautions have been taken to stamp out the first cases. Very generally, a number of cases occur which can be traced to a common source of infection, and the disease may assume epidemic proportions. The question naturally arises, What constitutes an epidemic? In other words, how many cases are necessary before an infectious disease, in a community with a given population, can be said to be epidemic. Various answers have been given; the writer believes that a sudden and undue prevalence of any infectious disease may very properly be characterized as an epidemic. A disease is spoken of as pandemic when it spreads, like influenza for example, over a great extent of country, affects groups of several countries of the world generally. The term endemic is applied to diseases that prevail in particular localities and are influenced by local conditions.

It is in the field of infectious diseases that hygiene has achieved, and doubtless will continue to achieve, its greatest triumphs, and there is ample room when we contemplate the frightful mortality from these diseases. Think of the fact that consumption, during the census year 1900, claimed 111,059 victims in the United States alone. Pneumonia caused 105,971 deaths; diarrheal diseases 46,907; typhoid fever 35,379; cholera infantum 25,576; influenza 16,645; diphtheria 16,475; croup 12,249; malarial fever 14,874; measles 12,866; whooping cough 9,958; septicemia 6,776; scarlet fever 6,333; cerebo-spinal meningitis 4,174. In order to appreciate the full significance of these figures we must consider not only the mortality, but also the number of cases treated. So, for example, the 35,379 deaths from typhoid fever in one year represent an annual prevalence of not less than 353,790 cases. The duration of a case of typhoid fever is not less than 30 days. If we calculate the average cost for care, treatment and loss of work to be $300, and the average value of a human life at $5,000, we have a total loss of $283,032,000 per annum from one of the so-called preventable diseases.

We know that many of these diseases are preventable, and can, at least, be checked, if not entirely stamped out. The decrease in the death rate from consumption, in the United States, since 1890, amounts to 54.9 per 100,000 of population. Diphtheria and croup, 52.5; cholera infantum, 31.9; diarrheal diseases, 19; typhoid fever, 12.5; malarial fever, 10.4; whooping cough, 3.1; scarlet fever, 2.7. Indeed, the average age at death in 1890 in the United States was 31.1; in 1900 it was 35.2 years.

"IF CERTAIN DISEASES ARE PREVENTABLE, WHY ARE THEY NOT PREVENTED?"

This very pertinent question was asked some years ago by the Prince of Wales, now King Edward of England. Our answer is, while every scientific physician knows full well that if the methods of prevention recommended by sanatarians—including the prompt disinfection of the dejecta of typhoid fever patients, the expectoration and excretions of diphtheria, tuberculosis and pneumonia patients—were adopted, these diseases would be reduced to a minimum, and probably eradicated in the course of a few years. The facts are, these recommendations have not been generally adopted because the knowledge gained by experimental medicine is not sufficiently diffused. Nor is the medical profession responsible for the fact that so many States still permit every charlatan to practice one of the most difficult and responsible of all professions, without a rigid system of examination. So long as we recognize and employ irregular and incompetent practitioners, so long will infectious diseases be spread as the result of ignorance and neglect.

The public should be made familiar with the nature and causes of infectious diseases, and be taught that many are a source of danger against which it is entitled to be warned. The Health Department should have competent medical inspectors and a clinical laboratory for the verification of the diagnosis. It should have the power, in certain of these diseases, to display warning signs, to enforce isolation and disinfection, and to take such other steps in the way of prevention as may be deemed necessary to limit their spread.

Isolation to be effective should extend to all persons who have come in intimate contact with the patient. This is rarely enforced, except in smallpox, in the case of the wage-earners of the family, but it is clearly their duty to take special precautions in the way of clothing and personal disinfection.

Since our knowledge of the nature of infectious diseases has been more and more defined, scientific methods for their prevention have been applied. We have learned, too, that in addition to the germ there must be a suitable soil for its proliferation and that sanitation should not only destroy the environment for its development without the body, but also place the system in the best possible condition to resist its poisonous action. In the way of individual efforts, all measures which will improve the tone, nutrition and vital powers of the system, many of which have been alluded to in the preceding pages, can not fail to render us less susceptible to infection. Nor should we underrate the importance of preventive inoculations, for it must be remembered that smallpox, for example, would continue to carry off one tenth of the population and disfigure another tenth if it were not for the protective influence of vaccination.

The diseases which deserve special preventive efforts on account of their undue prevalence are consumption, pneumonia, scarlet fever, diphtheria, typhoid fever, diarrhea and dysentery. During the prevalence of the last three diseases, and especially when the water is regarded with suspicion, the safest plan is to boil the drinking water and bring the milk to the boiling point. While the general rules of hygiene are necessary at all times, they are especially indicated during the prevalence of epidemics. A simple life, hope and courage, avoidance of excesses, of overwork, fear and anxiety will serve to maintain a natural power of resistance to infection.

If in spite of all precautions, including, of course, avoidance of sources of infection, contagious diseases should gain a foothold in the family, the advisability of hospital treatment ought to be seriously considered. The advantages from every point of view are in favor of such a course, especially when we consider the danger of infection to other members of the family.

Sick Room, Care and Disinfection.

If the patient is treated at home, a bright, quiet and cheerful room should be chosen, and promptly stripped of carpets and unnecessary furniture. It is in just such instances, when the importance of simple furniture, oiled or waxed floors, avoidance of draperies, dust and germ traps gain special significance. It is needless to insist that the room must be kept properly ventilated.

In the light of our knowledge it is certainly our duty to tell the family, in typhoid cases, that the infectious matter is contained in the excreta, and must be destroyed for the protection of others. In like manner we should not hesitate to inform a consumptive and his friends that the germs of the disease are contained in the expectorations; how they may be conveyed to others in coughing, kissing and dried sputum, and how they should be destroyed. And so we might go through the list of infectious diseases.

Scientific disinfection had its inception with the labors of Koch and Sternberg in 1880. Although certain physical and chemical agents were used empirically for ages, now we know, from laboratory experiments, that they are effective, because they destroy the vitality of the germs. We also know that in most of the contagious diseases the infective matter is given off by the patient chiefly through the secretions and excretions, and it is evident that disinfection to be of value must be directed to these and all the media with which the patient has come in contact.

A small gas stove near the sick room, and a four-gallon wash-boiler in which napkins, soiled linen, or clothing can be boiled, and thus disinfected before being laundered, will protect other inmates. The use of separate eating and drinking utensils, which can be boiled in a weak soda solution, is also a necessary precaution.

The refuse of meals should be placed in a covered vessel containing a disinfectant solution: 1½ tablespoonful of lysol to 1 quart of water. A similar solution may be used to wipe the floor, furniture and door knobs. Clinical thermometers, tongue depressors and other instruments should be kept in a disinfectant solution and rinsed off in warm water before using.

The stools, vomited matter, expectorations, urine, blood and pus of infectious patients, especially those suffering from typhoid fever, dysentery, cholera, tuberculosis, pneumonia, influenza, diphtheria and scarlet fever should be placed in a covered vessel containing the germicidal solution to be hereafter described, the whole to be thoroughly mixed and allowed to stand for one hour before throwing the contents into water closets or privy vaults. Disinfection is also indicated in diseases like typhus fever, cerebro-spinal meningitis, smallpox, anthrax, glanders and yellow fever; in the latter disease chiefly for the destruction of mosquitoes. It would also be well to resort to disinfection in all the early cases of measles, whooping cough, doubtful cases of fever and diarrheal affections.

In diseases like smallpox and scarlet fever, in which the infectious agent is given off most likely from the surface of the body, occasional sponging with dilute chlorinated soda solution, 1 part to 9 of water, has been recommended, or the body may be anointed with some harmless antiseptic ointment; while during convalescence, i. e., just before the patient mingles with others, a corrosive sublimate bath, 3 drams to 30 gallons of water is indicated. Infectious corpses should not be washed, but enveloped at once in a sheet saturated with a 5 per cent solution of carbolic acid or a bichloride solution, 2 drachms to a gallon of water.

All worthless articles should be burned. Metallic bodies may be sterilized by exposure to red heat or boiling. A good solution for soiled body and bed clothing is made of carbolic acid 3 parts, common soft soap 2 parts and cold water 100 parts; they should soak for two hours, when they may be rinsed and sent to the laundry. Valuable clothing, mattresses, carpets and draperies should be subjected to disinfection in a special apparatus furnished by the Health Department, and in the absence of such facilities they should be hung up loosely in the room and subjected to the influence of formaldehyde gas, which has also been found the most effective agent for room and house disinfection after the recovery, death or removal of patients, and is usually conducted by agents of the Health Office. A cheerful compliance with the rules and regulations of this service can not fail to be a benefit to the family and public at large. If such a department does not exist, it becomes the duty of the Attending Physician to see that the premises are properly disinfected. For this purpose it is necessary to make the apartments as nearly air-tight as possible, and to generate either formaldehyde by the combustion of wood alcohol or liberate it from formalin. The room must be kept closed for six hours after fumigation and it should then be thoroughly aired and exposed, when practicable, to sunlight, which is in itself a very efficient germicide.

The Report of the Committee on Public Health of the Medical Society, District of Columbia ("Washington Medical Annals," January, 1908), shows that there has been a marked reduction in the mortality of diphtheria, measles and scarlet fever during the past ten years in the American cities, coincident with the establishment of municipal quarantine and disinfection. The average reduction in the mortality from diphtheria in 10 cities amounted to 24.4 per cent. While in this disease the use of antitoxin has served to accomplish the result, the reduction of 44 per cent in the mortality from measles, and a reduction of 70.8 per cent in the mortality of scarlet fever must be largely attributed to preventive efforts, including, of course, higher standards of living.

In this connection the early use of diphtheria antitoxin should be emphasized. The average diphtheria mortality, where antitoxin was used, in Chicago, in 1902, was 6.48 per cent, and where not used it was 32.5 per cent; the mortality in children when used upon the first day was only 1.45 per cent, but when used later than the fourth day it rose to 14.49 per cent.

Space will not permit a detailed statement of other triumphs in preventive medicine, but the fact that, according to Surgeon-General Wyman of the Public Health and Marine Hospital, there were during the last eight years 242,847 cases of smallpox with 6,067 deaths in the United States, prompts the suggestion that every death from smallpox is a disgraceful reflection upon the intelligence of the age. This disease is entirely preventable by vaccination and proper re-vaccination. The statistics of England show, that in the last half of the 18th century out of every 1,000 deaths from all causes 96, or nearly one tenth, perished from smallpox. On the 14th of May, 1796, Edward Jenner introduced vaccination. During the period of optional vaccination the death rate fell from 200 to 41.7 per 100,000 of population, and from 1850 to 1898, during a period of compulsory vaccination, it fell to 5.3. In August, 1898, the "conscientiously believes" clause was inserted in deference to the anti-vaccinationists; 230,147 persons were exempted by the operation of the law, and in 1902 the rate rose in Scotland to 7.5, and in the United Kingdom to 6.1 per 100,000. The statistics of Prussia show that with the enactment of the re-vaccination law in 1874 the mortality has fallen to less than one tenth per 100,000 of population, while the rate in the registration area in the United States is just 34 times greater. Indeed, it is claimed that Prussia would be entirely free from the disease were it not for the importations from Russia and Austria. President Thomas Jefferson was instrumental in introducing vaccination in 1801 in the South, and in 1806, according to Harrington, wrote the following letter to Dr. Jenner:

"You have erased from the calendar of human afflictions one of its greatest. Yours is the comfortable reflection that mankind can never forget that you have lived. Future nations will know by history alone that the loathsome smallpox has existed and by you has been extirpated."

It is to be regretted that these prophetic words should not have been fulfilled in this country of progress and enlightenment. With the introduction of glycerinated animal lymph every vestige of prejudice against vaccination should cease, and compulsory laws should be enacted in every State, so that smallpox here, as in the German army, may become practically unknown. While quite a number of States have enacted laws requiring that unvaccinated children shall not be admitted to the public schools, the undue prevalance of the disease indicates that these laws are not rigidly enforced.

TUBERCULOSIS OR CONSUMPTION.

The total number of deaths reported as due to consumption in the United States during the census year of 1900 was 109,750, of which 53,626 were males and 56,124 were females. Statistics also show that the death rate from this disease in 1900 was highest in the District of Columbia. As a matter of fact, according to the records of the Health Office during the past 30 years, 14.5 per cent of all the deaths occurring in the District of Columbia have been caused by pulmonary tuberculosis. The death rate, however, has gradually and constantly improved and has fallen from 4.5 per 1,000 inhabitants in 1878 to 2.3 in 1907. This decline, we believe, is almost entirely due to improved methods in general sanitation and higher standards of living, which have increased the natural power of resistance to the disease. The decline in the death rate of the white race during this period has been from 3.3 in 1878 to 1.3 in 1907, and for the colored race from 6.9 to 4.5 during the same period. An emphasis is given to the comparison of the death rates of the two races when we realize that the average colored population of the District during the past 30 years was about 31.8 per cent of the entire population. In other words, 31.8 per cent of the population has furnished over 54 per cent of deaths from pulmonary consumption since 1878. There were 9,534 deaths from this disease during the past 12 years in this city: 4,266 white and 5,268 colored.

Consumption not only leads the list of diseases in order of frequency and mortality, but the pecuniary losses entailed by the long duration of the disease, and the danger to others from infection, renders the subject of importance from an economic as well as medical point of view. If we assume the average duration of the disease to be 200 days, and that $2.00 per day is expended for treatment, care and loss of work, the 9,534 deaths in 12 years involved a total financial loss to the community of $3,813,600, or an average of $317,800 per annum.

The classical researches of Koch have established beyond a doubt that the disease is caused by the growth and multiplication in the body of man or animal of a living microscopic organism or vegetable cell, called the tubercle **bacillus.**

The mere introduction does not necessarily cause disease, as the system possesses certain defensive forces, and if the tissue cell happens to be stronger than the microbial invader no harm results. If, on the other hand, the conditions of the system favor the growth and development of the germ, little tumor-like knots are formed, known as tubercles or tubercular deposits. These, if formed in the lungs, may soften and break down and are coughed up. Heller calculates that seven thousand two hundred millions of bacilli may be expectorated in 24 hours by a single patient.

The disease most commonly affects the lungs, but may also affect the glands, intestinal and other internal organs; also the skin, mucous membranes, bones, joints and the membranes of the brain.

The bacillus has been found in all tubercular deposits in man and animals, and the most frequent source of infection is conveyance from man to man, while the possibility of transmission from animals to man cannot be ignored.

The germs may enter the system by the respiratory and alimentary passages, and by the skin and mucous membranes if there is an abrasion. The tubercle bacilli have not yet been demonstrated in the soil, water or atmosphere, except in the immediate vicinity of a consumptive. Cornet demonstrated their presence in the dust of rooms and hospitals inhabited by consumptives in 40 of the 147 samples examined. Since the breath of tuberculous patients does not contain the germs, we may assume that, when found in rooms, they originate from the material coughed up by persons and carelessly expectorated upon the floor, walls or carpets, which material after drying becomes a constituent of the household dust.

It has also been shown by the classical investigations conducted under Professor Fluegge, that about 80 per cent of consumptives may in coughing, sneezing and talking project into the air little droplets infected with tubercle bacilli, within a distance of 2 to 3 feet from the patient; and that these droplets constitute a source of danger, as they may be inhaled in a fresh and virulent state, especially if patients fail to guard against this mode of spreading by the use of handkerchiefs held before their mouths. It is believed that this mode of spreading infection also operates to a great extent in influenza, and infectious catarrh of the respiratory passages, sore throats, diphtheria, etc. Fluegge, without wishing to exaggerate the danger from droplet infection, believes it to be greater than from the inhalation of infected dust. He very properly emphasizes the sources of infection from fresh dried sputum on floors, handkerchiefs, clothing, towels, etc., and it is perfectly conceivable that the germs may likewise be conveyed by small particles of sputum in kissing, in instrumental manipulations, or by adhering to eating and drinking utensils in common use. There is much reason to believe that the germs may be conveyed in clothing from carelessly expectorated sputum. Perlen tells us that of 4,177 tuberculous subjects treated in the Munich Poliklinik, 709 were engaged in tailoring, cleaning and shoe shops.

Tubercle bacilli have been found in the milk of tuberculous mothers and cows, especially when the lacteal glands were the seat of the disease or the system infected with general tuberculosis; they have also been found, under certain conditions, in the flesh of animals, and in the blood, feces and urine of affected persons. Milk, cream, butter, ice cream and dairy products may contain tubercle bacilli if the product is derived from an infected cow.

Professor Koch's views on this subject are in substance as follows:

(1) The tubercle bacilli of bovine tuberculosis are different from those of human tuberculosis.

(2) Human beings may be infected by bovine tubercle bacilli, but serious diseases from this cause occur very rarely.

(3) Preventive measures against tuberculosis should, therefore, be directed primarily against the propagation of human tubercle bacilli.

His opponents, on the other hand, believe that the danger from the transmission of bovine tuberculosis is considerable, and infection by the intestinal route may not only produce tuberculosis of the bowels, peritoneum and lymphatic glands, but also of the lungs. Much remains to be done, however, to determine the real degree of danger from bovine tuberculosis.

According to Dr. Salmon, during the year 1900, of 4,861,166 inspected cattle in the United States, 5,279, or 1 in 921, were tuberculous; and of 23,336,884 hogs, 5,444 were sufficiently affected to cause contamination of some part of the carcass. The writer has tabulated 86 cases of milk-borne tuberculosis, 3 accidental inoculations in man by the topical application of cream and milk, and 12 tuberculous wound infections in veterinarians and butchers.

The possibility that the germs of tuberculosis may be carried by means of flies and dust suggests that greater precaution be exercised in the exposure of food stuffs in show windows and markets. Other modes of infection, such as by the mucous membranes of the eye, genitals, wounds, and even through the unbroken skin, have been reported. There is little or no evidence to show that the disease is ever inherited, but we may assume that in children of consumptive parents we are dealing with the transmission of vulnerable anatomical elements, and this, together with the fact that they are constantly exposed to the germs, renders them peculiarly liable to the disease.

From what has been said it is evident that the tubercle bacilli are widely scattered; the modes of invasion are also numerous; and yet there is a certain proportion of those exposed who do not contract the disease. This shows that in addition to the germ there must also be a suitable soil for its growth and development. Such a soil is usually found in persons of feeble physique, victims of malnutrition, whose body has been weakened from any one or more of numerous causes, whether it be a previous attack of sickness, loss of sleep, dissipation, morbid habits, insanitary houses, lack of pure air, cleanliness, sunlight and outdoor exercise or of proper food.

Clinical experience indicates that faulty nutrition, debility, loss of blood, anemia, mental anxiety, diabetes, whooping cough, measles and other diseases favor the development of tuberculosis. We also know that a predisposition may be inherited, as evidenced by a delicate physique, narrow chest and general vulnerability of the tissues. A vulnerability of the tissues to the disease may also be acquired by dust-producing occupations, and here the amount of dust seems less important than the character of the particles which compose it. For this reason, no doubt, the hard, sharp and angular particles of iron and stone dust are more liable to produce injuries of the respiratory passages, thus favoring the invasion of the bacilli.

Uffelmann believes that what we call inherited or acquired predisposition to tuberculosis may amount, in many instances, only to a local susceptibility of the respiratory passages, a weakness of the membranes and greater vulnerability, and refers to the fact that some individuals, otherwise healthy, show a greater liability to laryngeal and bronchial catarrhs, and later to tuberculosis, whilst in others repeated attacks of tonsilitis predisposes to diphtheria.

The observations of Dr. Bowditch, of Boston, and Buchanan, of England, indicate that damp soils and habitations are important predisposing causes to tuberculosis, and we know positively that a decided reduction has been observed everywhere coincident with the introduction of sewers. The only reasonable explanation is that sewers have helped to purify the air and rendered otherwise damp soils and houses dry and more healthful. It is well known that a damp soil is liable to make a house damp by capillary attraction, and the injurious effects of damp air have already been pointed out on page 99.*

As in other infectious diseases, the question as to whether the germs are introduced directly, and in sufficient numbers, is of importance. The observations of Humphrey, Pollock and Leudet conclusively show that in well ventilated wards, of chest and consumption hospitals, the disease is not usually found to spread. In private practice the results are different. A French committee of investigation presents two hundred and thirteen cases of tuberculosis in which the communicability of the disease was clearly established. In sixty-four of these cases the disease was conveyed from husband to wife; in forty-three from the wife to the husband; in thirty-eight it was transmitted to brothers or sisters; in nineteen from parents to the children; in sixteen to distant relatives; and in thirty-two to outsiders. The communicability was most marked among the poorer classes. Another collective investigation by a German medical society revealed the fact that of nine hundred and thirty-eight married persons who died of acquired tuberculosis, in one hundred and one instances either the husband or the wife also contracted the disease. In 8.1 per cent of these cases the husband contracted the disease from his wife, and in 13.2 per cent the wife was infected from the husband. Other statistics might be adduced in favor of the communicability of the disease, but Zasetzky's observation is of special interest. He reports the case of a tuberculous woman who married, between 1872 and 1883, three husbands, all previously healthy; the first husband died in 1879 of tuberculosis; the second in 1881, and the third husband, at the time of the report in 1884, was also a victim of the disease, the wife in the meantime having died of consumption.

We can only explain the greater contagiousness in such cases by a more intimate contact, the occupation of the same room and bed, common use of eating and drinking utensils, mouth to mouth contact, and the vitiated and infected air of private rooms.

Early Symptoms of Consumption.

The early symptoms are by no means clearly defined; we have, however, a steady loss in weight, with a slight amount of fever, especially in the afternoon or evening; the heart's action is quickened upon the slightest exertion, there is a general feeling of progressive weakness with loss of appetite, or disturbed digestion. There may or may not be a cough in the early stage of the disease. The symptoms referred to are sufficiently serious to call for the advice of a physician, and should never be neglected. Every child should learn to know that prompt treatment in the incipient stage offers the best chances for recovery, and that by proper care 80 per cent may be permanently cured.

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*Kober's "Industrial Hygiene."

Consumption is a curable disease, and the chief remedies, such as fresh air, wholesome food and living quarters, suitable clothing, systematic bathing and hardening of the skin are also the best preventive measures. Patients should not waste money on patent medicines or advertised cures for consumption. No reputable physician ever advertises his skill, and persons unable to pay for medical services will always find competent men at the dispensaries.

PREVENTION OF TUBERCULOSIS.

The facts presented in the foregoing pages justify the following conclusions:

(1) Tuberculosis is an infectious disease caused by a microbe, transmissible to healthy persons under certain favorable conditions.

(2) Inherited and acquired predisposition play an important role in the invasion and multiplication of the bacilli.

(3) The germs may enter the system by the respiratory and alimentary passages, and by the skin and mucous membranes, if there be an abrasion.

(4) While the bacillus may be transmitted through the milk, flesh and blood of animals and man, the most common and effective way of distributing the disease is by the sputum and droplets of tuberculous patients.

(5) The habitations of consumptives as well as their personal effects, clothing, etc., are infected and liable to convey the disease to others.

Space will not permit me to consider in detail the measures for the prevention of this disease, but I desire to emphasize a few which may be resorted to in the control of the sources of infection and the diminution of the predisposing causes.

(1) Compulsory notification of cases to the health authorities as soon as the disease is recognized. This is of vital importance for the location and control of the sources of infection, and for the protection of the family and others. It has been urged that the depressing effect of such information would be too great for the patient, but this will surely be counterbalanced when we inform him that it is a curable and preventable disease, and that his chances for recovery are especially favorable if he does not reinfect himself.

The health authorities, apart from distributing proper printed directions for the use of the family and the patient, as regard the care, disinfection of sputum and avoidance of droplet infection, should also resort to disinfection of the home and personal effects, especially upon the death of the patient or vacation of the premises. It is a good plan to receive the expectoration into paper spitting cups, paper napkins or moist saw dust, which should be burned. Cuspidors should contain a carbolic acid solution (6 ounces to a gallon of water). The patient, when out-doors, should use pocket spitting flasks, and during coughing or sneezing hold a handkerchief over mouth or nose. Under no circumstances should patients spit into spaces where the expectoration may be dried, and as pulverized dust, gain access to the air. The same directions about disinfection apply to cases suffering from pneumonia, influenza and diphtheria. The public should not cultivate an exaggerated fear of such cases, but has a right to insist upon clean and decent precautions.

(2) The enactment and enforcement of laws against promiscuous expectoration and coughing into the faces of persons where the sputum is liable to infect, and provisions for suitable spittoons and their proper disinfection in all public places are called for. The streets should be sprinkled and swept at night so as to reduce the inhalation of germ-laden dust to a minimum.

(3) The supervision of the sanitary condition of hotels, theaters, churches, schools, ambulance service, sleeping cars, etc., should likewise be under the control of the health department, and house-cleaning should be accomplished as far as practicable by the vacuum system.

(4) Marriage with a tuberculous person should not only be discouraged, but absolutely prohibited by law. A tuberculous mother should not nurse her infant, and in the selection of a wet nurse a certificate of health should be demanded.

(5) Isolation of tuberculous patients should be insisted upon in hospitals, asylums and public institutions. In private life the patient should occupy at least a separate bed, use separate eating and drinking utensils and neither receive nor give kisses.

(6) Government inspection of dairies and of dairy and meat products, and the extermination of bovine tuberculosis, are called for. Until this is accomplished or as an additional precaution, milk should be heated to 150 F. for 10 minutes, cooled quickly and kept cold, and all meats should be well cooked.

Having considered the sources of infection and the indications for their control, it is well to refer to what may be done towards diminishing the predisposing causes to consumption. Many of these questions have been considered under personal hygiene, habitations, ventilation, food, alcohol, tobacco, clothing, bathing, etc., and it remains to sum up the duties of the State in this direction.

Reference has already been made to the good effects of sewers in preventing air pollution, and in the removal of dampness by drainage. When we recall the influence of sewers upon the prevalence of the disease, and remember that only about 30 per cent of the population in the United States live in sewered towns, and about 41 per cent live in towns having public water supplies, we see at once the necessity that a system of public sewerage should go hand in hand with the public water supply. The neglect on the part of the State not only increases the dampness of the soil, but compels recourse to the various make-shifts for the collection and removal of excreta, and leads to pollution of the air, soil and water.

INSANITARY DWELLINGS.

The influence of insanitary dwellings on the prevalence of tuberculosis has already been emphasized.. In addition to what has been said on page 99,* it should be remembered that the tubercle bacillus clinging to floors and walls in carelessly expectorated sputum or droplets would be destroyed by a few hours of sunlight, but finds in damp and gloomy rooms a suitable environment for its vitality and growth; and the other insanitary factors alluded to vastly increase the susceptibility to the disease. For all these reasons I consider the condemnation of houses unfit for human habitation, and substitution of sanitary homes, only second in importance to the destruction of the germs.

The State may not be in position to provide sanitary houses, but it can at least regulate and supervise the construction of all new houses with reference to the exclusion of dampness, sanitary plumbing, amount of air space, light, heating and ventilation of dwellings, and clearly define what constitutes an unsanitary tenement, offered for rent, and provide a suitable penalty. The State should also interdict the erection of tall buildings, and of all buildings covering over 66 per cent of the lot, since they shut out light and air, thus destroying the very object for which broad streets and avenues were created, and bringing us back to the insanitary era of the medieval towns with their narrow and winding streets.

PHYSICAL CULTURE, PUBLIC PLAYGROUNDS AND BATHS.

The State should pay attention to the physical development of our youth, and this is best accomplished by proper training, preferably in the open air, in connection with the public schools and playgrounds.

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*Kober's "Industrial Hygiene."

The children of consumptives require special attention because of the transmission of vulnerable anatomical elements which render them peculiarly liable to the disease; this predisposition may certainly be overcome, in addition to proper food, by pure air, methodical gymnastics and systematic hardening of the skin secured by bathing, and no school should be without these hygienic advantages. If it be found that school children are starving for want of food it is clearly our duty to make suitable provisions to prevent permanent dependency. No effort should be spared to increase the resisting power of the individual. Indeed, we are altogether too apt to underrate the question of soil or predisposing factors in our crusade against the disease.

There is abundant statistical material to indicate the influence of dust-producing occupations as a predisposing factor to tuberculosis and other pulmonary diseases, and it is clearly the duty of the State to formulate efficient laws in regard to factory sanitation and the occupations in general which are injurious to health.

It is certainly the duty of the State to see that every patient who has no home, or whose environment offers less favorable conditions for his recovery, is provided with proper care and shelter. It may be truly said that hospital treatment of consumptives offers the best chances for recovery and the ultimate extermination of the disease, and the State, until a comprehensive system of industrial insurance has been adopted, must shoulder the responsibility in the case of patients unable to bear the financial burdens. Every city of any size should provide facilities for the isolation and proper treatment of the patients, supplemented by general State sanatoria. Since the identification of the disease is the first and most important step in its treatment and prevention, the establishment of dispensaries for the recognition of incipient cases among the dependent classes seems urgently called for. Such dispensaries should become the feeders for municipal and State sanatoria, and when properly conducted, with special reference to social service, will be a most important factor in the combat against tuberculosis. In all such cases it is desirable to sift charity from abuse; and it devolves upon the State to determine the financial condition of the applicant and also prevent destitution of the family while the bread-winner is incapacitated for work. It is also the duty of the State to suppress quackery, for no class falls more readily a prey to unscrupulous mountebanks than our consumptives.

The Federal Government is already performing an important duty by exercising a watchful care over the subject of tuberculosis among animals. The preventive measures urged by the Bureau of Animal Industry are of far-reaching significance, although primarily intended to protect the pocketbooks of our farmers and stockraisers. Large sums are annually, and very properly, expended to quarantine our seaports against cholera, yellow fever and smallpox because these diseases, if permitted to gain a foothold, occur in epidemics, are rapidly fatal, and hence strike terror into a community. It is to be hoped that similar opportunities will be afforded the Public Health Service to cope with tuberculosis, which claims more victims than all these diseases combined.

In the actual care and treatment we also have a right to expect a more active participation on the part of the Federal Government. It is a notorious fact that thousands of helpless cases of consumption are annually dumped upon our States and Territories which have become famed as health resorts; and the hospitals, sanatoria and almshouses of the Carolinas, California, Colorado, Arizona and New Mexico are filled with indigent dying consumptives.

It is claimed by Mr. Frank D. Witherbee, in "Charities," November 6, 1904, that in Phoenix, Arizona, public and private charity is taxed to the uttermost, and that three-quarters of the money expended on the inmates of the almshouse goes to alien consumptives. It is cruel and worse than useless to send a consumptive away from home without sufficient means to secure the ordinary comforts and advantages of climatic treatment, and the Federal Government should not tolerate it. But until this is prevented, the Public Health and Marine Hospital Service should be authorized to study the problem, which studies may form the basis for a more permanent and enlightened amelioration of the sufferings of this unfortunate class of victims.

It is very evident that the great problem which confronts most of our sanatoria today is, what shall be done with the class of indigent patients whose disease has been arrested, but who need suitable employment and surroundings for their permanent recovery? While it is hoped that the opportunities of a co-operative system will broaden out in time in connection with the State sanatoria, it cannot be denied that certain sections in the far West offer suitable advantages for a permanent cure, and the question arises whether the Federal Government would not be justified in engaging in extensive live-stock raising and employ young men of this class to do the work? The Government needs horses and mules, beef and mutton, butter and dairy products for the public services. It has many valuable reservations, susceptible of cultivation with or without reclamation, and there is no good reason why such Government farms should not prove self-supporting.

The results of the Government Sanatoria for consumptives at Fort

Bayard, Fort Stanton and Fort Lyons have been so gratifying that substantial and permanent results may be hoped for by an expansion of the system to at least the civilian employees of the Government, along the lines indicated, or by the establishment of colonies for arrested cases.

PNEUMONIA.

Pneumonia ranks next in frequency to consumption as a cause of death. During the census year of 1900 there were 105,971 deaths from pneumonia in the United States.

The records of the Health Department show that during the past 12 years there were 5,947 deaths from this disease in the District of Columbia, 2,632 white and 3,315 colored.

The undue prevalence of pneumonia and tuberculous diseases of the respiratory system is general. The colored population shows a peculiar susceptibility, which is, in all probability, caused by environment and sociological factors rather than by racial differences. At all events, an attempt will be made, on page 120, to account for the undue mortality among our colored population.

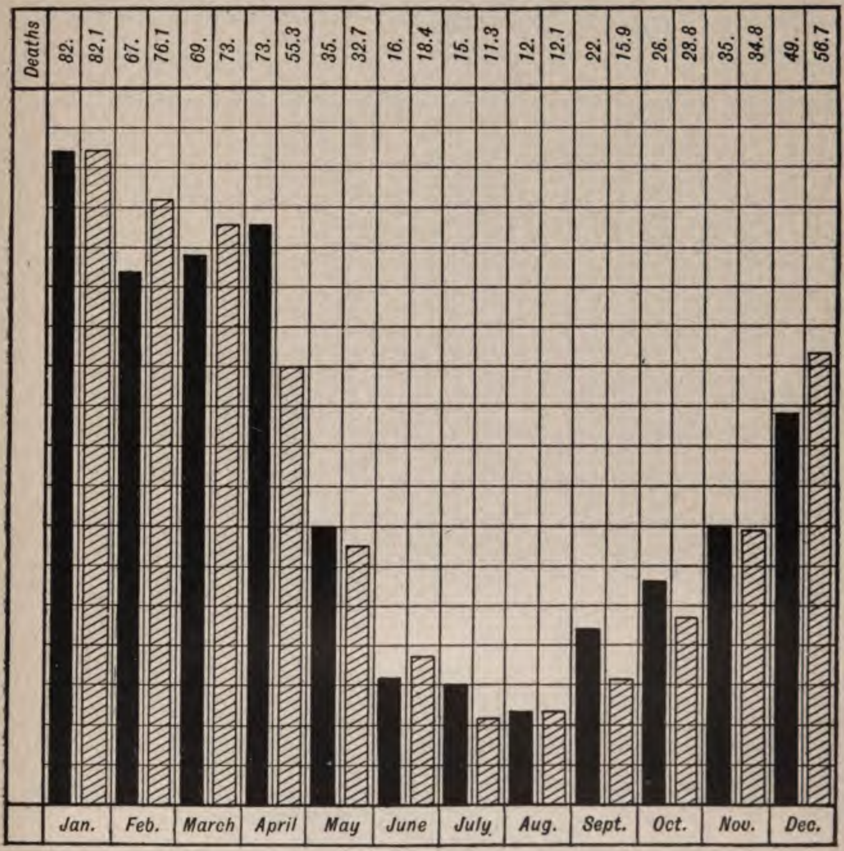
Pneumonia, like tuberculosis, is an infectious disease, and is caused by a microbe, first discovered by General George M. Sternberg in 1880, and subsequently demonstrated to be the essential factor in the causation of the disease. This germ, known as a micrococcus, is found in a considerable number in the mouth and saliva of perfectly healthy subjects, and in very great numbers in the phlegm which fills the air cells of the affected part of the lung, and is coughed up during the disease in the form of rusty sputum. The rusty appearance is due to the presence of blood corpuscles issuing from highly inflamed lung tissue. The danger in pneumonia depends upon the extent of lung tissue involved, the amount of toxins generated and absorbed, the condition of the heart and kidneys, and the general power of resistance of the patient.

In the causation of the disease we are evidently dealing with several factors, viz., the presence of the micrococcus, individual predisposition and an exciting cause. Since the germ has been found in the mouths of perfectly healthy persons, and was in fact discovered by General Sternberg in his own saliva, we may conclude that the invasion of the microbe alone is not sufficient to produce the disease. If, therefore, an attack of pneumonia results, the patient must have furnished a suitable soil for the rapid multiplication of the germs, and the structural changes which are brought about by their agency. As in tuberculosis, so in this disease debilitating factors and depressing influences, such as malnutrition, alcoholism and insanitary surroundings are important predisposing causes. But in addition to all this there must be an exciting cause. A careful study of the seasonal prevalence shows that pneumonia, like tuberculosis, bronchitis and congestion of the lungs is very much influenced by temperature, humidity and prevailing winds. The following chart of the Health Department shows deaths from pneumonia during 1906, arranged by months, compared with the average monthly deaths for the past ten years. This chart shows that the disease is especially prevalent during the colder months of the year, and reaches a minimum in June, July, August and September. It is well known that cold, and especially damp cold, winds are often the cause of catching cold, probably because they abstract bodily heat in proportion to their velocity, and if this takes place to an unusual degree, or with great abruptness, the capillaries of the skin contract, the blood is driven into the internal organs, and congestion results, usually in the weakest spot. As an additional effect of sudden changes in temperature, we have the suppression of the cutaneous function and consequent retention of effete matter in the blood. We can readily appreciate how all this may be aggravated by the habitual presence of alcohol in the blood current, which diminishes oxidation of the waste products, and also by overcrowding, because the effect of deficient air supply is not only to reduce the quantity of carbonic acid by expiration, but also to diminish the normal oxidation of effete matter. In any event, the conditions referred to favor the accumulation of effete matter, render the blood current sufficiently impure to lose its germicidal properties, and thus constitute a suitable fluid for the rapid multiplication of the pneumococcus invader. It is also evident that other depressing influences, such as previous illness, especially an attack of measles or of influenza, vastly increase the vulnerability of the tissues and chances of infection.

This disease is doubtless communicable from sick to well persons, as shown by the occurrence of epidemics in prisons, institutions, etc.; indeed, its infectiveness is no longer a matter of doubt, and calls for prompt disinfection of the sputum and avoidance of close contact, in the manner already described in the care of tuberculous patients.

While precautionary measures for the destruction of the germs are of great importance in stamping out the sources of infection, our aim must also be directed towards the correction of predisposing and exciting causes. This we can do by clothing adapted to climate and seasons, proper housing conditions as regards heating and ventilation, proper food and temperate habits. The disease, unfortunately, is increasing in this country, and the increase is doubtless influenced by the increased

MONTHLY DEATHS FROM PNEUMONIA DURING 1906, COMPARED WITH AVERAGE MONTHLY DEATHS FOR PAST TEN YEARS.



■ *Deaths from Pneumonia during 1906, by months.*

▨ *Average deaths from Pneumonia, by months, for 10 years.*

Reproduced from Report of the Health Officer, District of Columbia, 1907.

consumption of alcohol. We have already emphasized the fact that pneumonia is vastly more fatal among the topers.

We may also lessen the harmful effects of abrupt changes in temperature by systematic hardening of the skin, remembering always that a normal function of the skin depends largely upon cleanliness, and a proper tone of the cutaneous vessels and nerves, secured by bathing.

INFLUENZA. "LA GRIPPE."

Influenza or epidemic catarrh is also an infectious disease, caused by a very small bacillus, discovered by Pfeiffer in 1892. This organism is constantly found in the bronchial and nasal secretions of the affected persons and, as in tuberculosis and diphtheria, is largely disseminated by close contact with the sick. The disease often assumes pandemic proportions, because all ages are susceptible to infection, and no precautions are taken to guard against its contagious nature. As early as 1173 the disease is reported to have appeared in different parts of Germany, Italy and England, and since then over sixty epidemics have been recorded, of which fifteen were very extensive. The disease in the United States was first recognized in New England in 1627, and a number of epidemics, notably those of 1807, 1815, 1824, 1847-48, 1851, 1857-58, 1874-75 have been recorded. The most extensive epidemic occurred in 1892 to 1897, and during the census year 1900 there were no less than 16,645 deaths from the disease in this country. During the past 12 years 808 deaths were reported in the District of Columbia. It is by no means a trivial affection, as it carries off a number of persons, chiefly from pneumonic complications, and wrecks the health of many more by affections of the nervous system, heart, kidneys, eyes and ears. In the prevention of the disease the same general rules which have been urged in tuberculosis and pneumonia are clearly indicated.

TYPHOID FEVER.

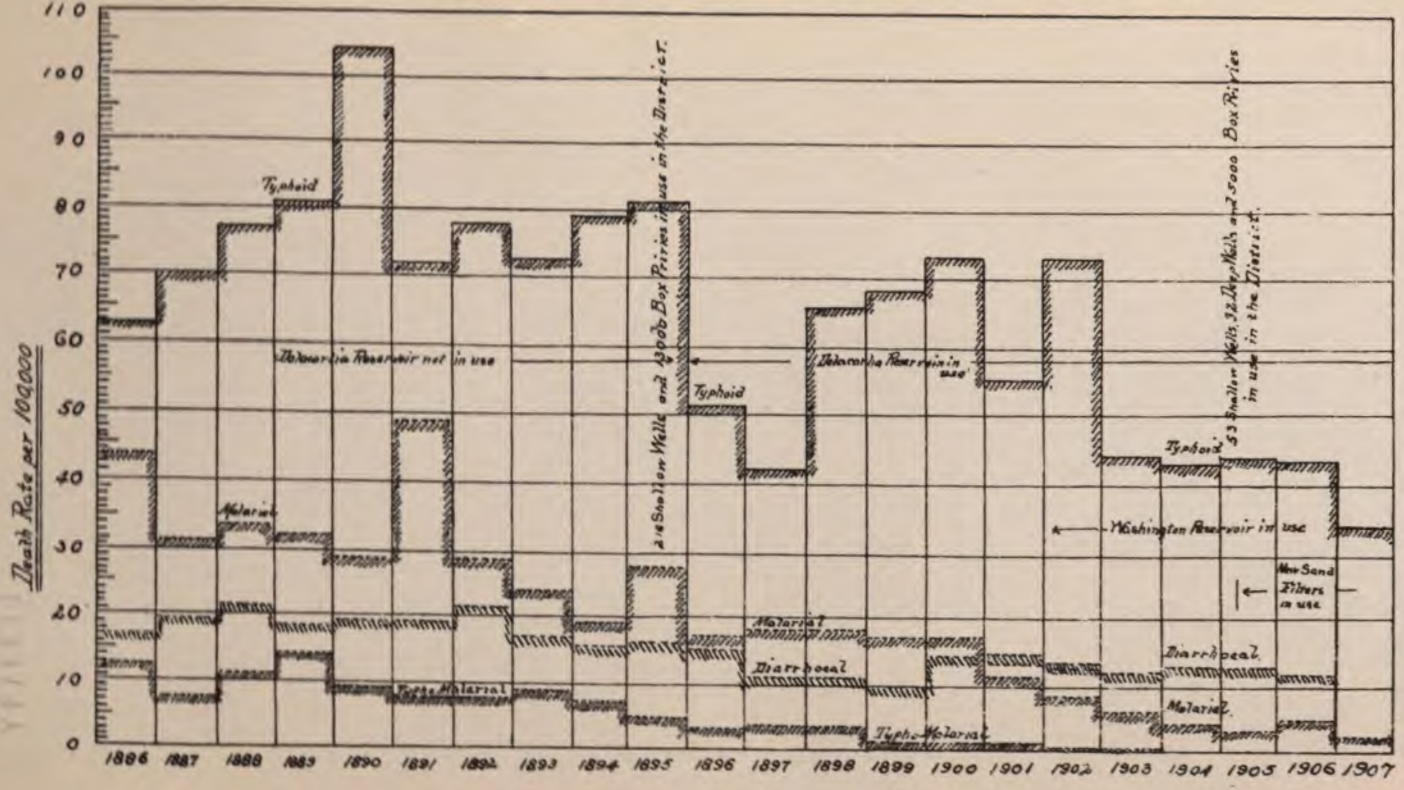
Typhoid fever carries off annually over 35,000 victims in the United States. According to the records of the Health Department there were during the ten years ended December 31, 1906, 1,693 deaths from this disease in the city of Washington: 968 white and 725 colored. Based upon an estimated mortality of 10 per cent, it is within reason to assume that there were not less than 16,930 cases during the same period. If we calculate the average cost for care, treatment and loss of work to be $300.00, and the average value of a human life $5,000, we have a total loss in the vital assets of this community of $13,544,000 from one of the so-called preventable diseases.

Typhoid fever is essentially a filth disease, caused by a specific bacillus, which is constantly found in the intestinal discharges, and almost always in the blood and urine of typhoid fever patients. The invasion of the microbe most likely takes place through the alimentary tract, as evidenced by the location of the disease in the intestines, and the frequent dissemination of the germs through the water and milk supply. The possibility of transmission through the air should not be excluded, for, as in tuberculosis, so in this disease the infectious material may have become dried and pulverized, and with particles of dust may gain access to the food or the mouth, there to be swallowed or inhaled.

The principal source of transmission, however, is through the water supply, infected milk, food and infected hands. In all such instances the virus proceeds primarily from the stools and urine of typhoid patients, and gains access through sewers, or otherwise, to the water supply, or contaminates vegetables and fruit which are eaten raw, through the medium of night soil or washing them with infected water. Milk and food may be contaminated by washing the utensils with infected water or by handling it with unclean or infected fingers. The writer, in his investigation of the typhoid fever situation in 1895, also pointed out how flies may carry the germs on their feet, from typhoid stools and infected sources, to the food and milk supply. There is special danger from infection of the fingers in handling or washing soiled patients, or their clothing, bedding and utensils, as the germs from the soiled parts may cling to the fingers and be conveyed to the mouth during eating, or infect the food and milk of others, in handling it, unless the hands have been thoroughly washed after every unclean act. Moreover, it has been shown within the last ten years that some persons after recovering from typhoid fever may continue to carry the germs, and spread them through the urine and feces, although the persons themselves apparently enjoy good health. From the statistics of Lentz, Klinger and V. Drigalski, Goldberger estimates that about 3 per cent of typhoid fever patients become "chronic bacillus carriers," and thus constitute an important source of infection, chiefly in handling milk and food. Those who are familiar with the average dairy employee or cooks will have no difficulty in surmising how the fingers may become infected by careless toilet habits. Indeed, it is very evident that the Mosaic law of ablution of the hands after every unclean act can not be too strongly urged in the light of our knowledge concerning the transmission of disease germs.

Notwithstanding the different modes of dissemination of the germs it should be remembered that typhoid fever is a typical water-borne disease. The infection of a water supply is either direct or indirect; the former includes all instances where the water is contaminated by

EFFECT OF WATER PURIFICATION UPON DEATH RATES FROM TYPHOID FEVER, MALARIAL AND DIARRHŒAL DISEASES IN WASHINGTON, D. C., PER 100,000 OF POPULATION.



specifically infected sewage emptied directly into the river or lake, or by excreta deposited along the banks, which sooner or later are washed into the water supply. By indirect infection we understand those instances in which the excreta, or wash waters, have been deposited in or upon the soil, and by percolation finally reach wells, springs, or other bodies of water.

That the excreta from a single typhoid patient have infected the water supply of a whole community has been shown in connection with the epidemic at Cumberland in 1889; the history of which shows that there were no cases of typhoid fever in that town until the discharges from a young man, who returned from Ohio in December, quite sick, found their way into the public water supply. This case died December 20th. The next case appeared January 10, 1890, and within a short time 485 cases developed in a population of 1,200. Every case but one was traced to polluted river water. The accompanying chart shows that the epidemic resulted in the highest typhoid mortality rate ever reached in this city, viz., 104 deaths in every 100,000 of the population.

The typhoid fever epidemic at Plymouth, Penna., which affected over 1,100 persons, and began April 9, 1885, was traced to a case who contracted the disease elsewhere, returned to his home in January, 1885, and was for many weeks quite ill. The dejecta from this case were thrown along the sloping banks of a mountain stream where they remained innocuous upon the snow and frozen ground until sometime between March 25th and April 1st, when thaws set in. Under the influence of this thaw they were washed into the mountain stream and carried into the reservoir which supplied the town with water. There is every reason to believe that the typhoid fever germs were distributed in the water between March 28th and April 4th or 5th. The first case was reported April 9th. During the week beginning April 12th from 50 to 100 cases appeared daily, and on one day it is said that 200 new cases were reported.

Such instances might be multiplied by the hundreds; we have simply to recall the epidemic at Ithaca, N. Y., during the months of January, February and March, 1903, affecting 1,350 persons in a population of 13,000, with 78 deaths, among them 128 students at Cornell University with 26 deaths. The epidemic at Butler, Penna., in the same year, affecting 1,348 persons with 111 deaths in a population of 18,000; the epidemic at Columbus, Ohio, in 1904, with 1,640 cases and 166 deaths in a population of 140,000; and the more recent epidemic of Scranton, in 1906-07, with 970 cases and 77 deaths, are other shocking examples of water-borne typhoid.

INFLUENCE OF WATER SUPPLIES UPON TYPHOID FEVER RATES.

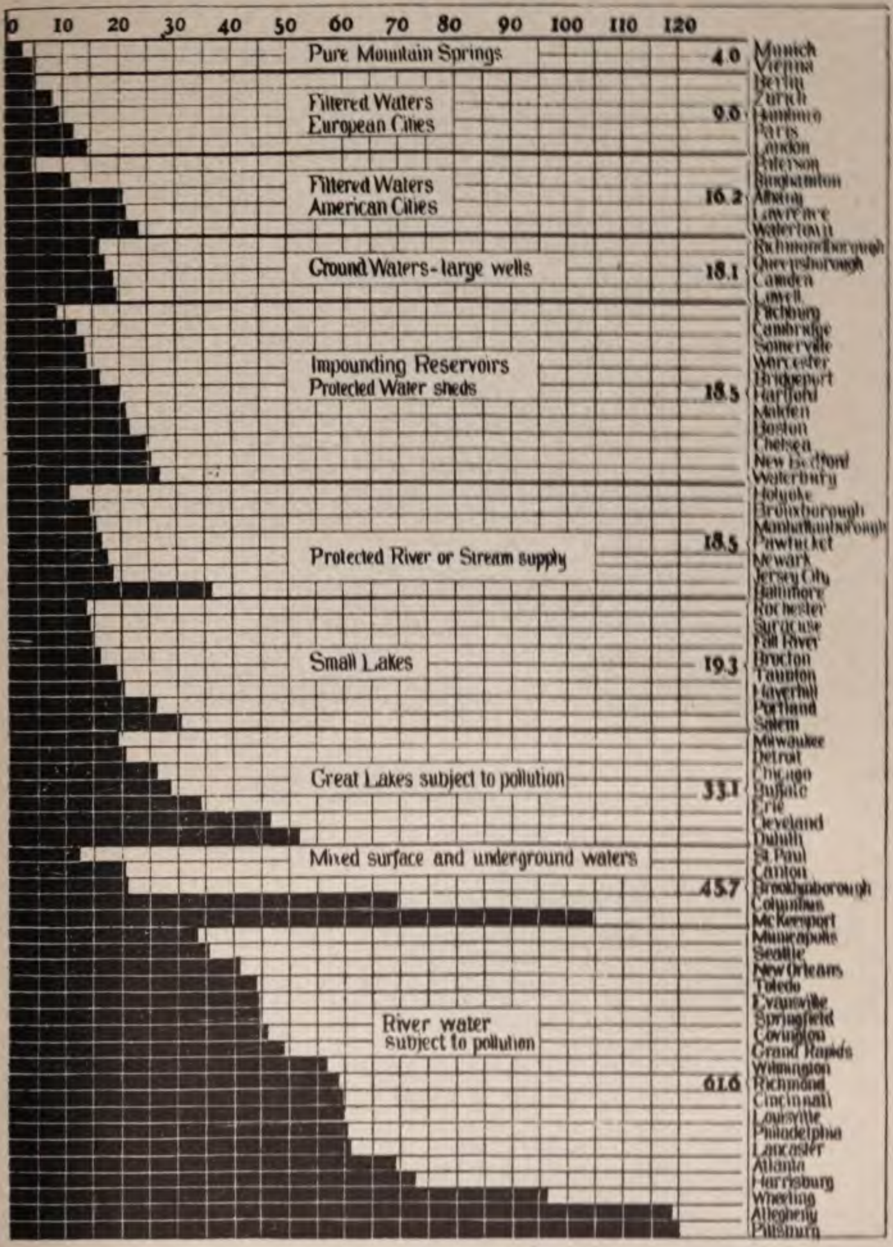
Sanitarians are so convinced that a pure water supply is incompatible with a high typhoid fever rate that they unhesitatingly declare, "Show me a city's statistics of the disease and I will tell you the character of its water supply." The writer, in a paper on "Conservation of life and health by improved water supply," presented a number of diagrams showing the typhoid fever rate in a number of cities, classified according to their water supply, of which plate 7 is here reproduced.

This diagram also conclusively shows that the European cities which do not only prevent pollution of rivers, but also filter their water, enjoy the lowest typhoid fever rates. In the same paper the writer has shown that in seven American cities the reduction in typhoid fever, after the introduction of pure water, amounted to 70.5 per cent, and that during the past 25 years the death rate from typhoid fever in 14 countries and cities, tabulated by him, has been reduced 54.3 per cent. The Bulletin for the month of April, 1908, of the New York State Department of Health shows that the death rate from typhoid fever in 10 cities of that State has been reduced 53.4 per cent by an improved water supply.

CAUSES OF TYPHOID FEVER.

The writer has heretofore held that about 50 per cent of the cases are water-borne (well, river, commercial and ice), and has taught for years that wells in this city, on account of soil pollution, should not be tolerated, and that the only way to render a suspicious supply safe for drinking purposes was to boil the water. The danger from Potomac water, since filtration, has been practically eliminated, but ice should not be mixed with it as it may be as impure as the water from which it is derived. Moreover, iced drinks and foods are also objectionable on account of the injury to the digestive functions, especially in the summer months, unless sipped very slowly, and, upon general principles, ice cream should be made with sterilized cream.

In the writer's report on typhoid fever for 1895, he urged as a preventive measure the boiling of milk, and the systematic inspection of dairies. This, together with the fact that he has tabulated 195 of so-called milk-borne typhoid epidemics, clearly indicates that in his judgment milk is to a certain extent responsible for the dissemination of the disease, probably in about 15 per cent of the cases. In 148 of the 195 epidemics analyzed by him there is evidence of the disease having prevailed at the farm or dairy. In 67 instances it is probable that the infection reached the milk by soakage of the germs into the well water with which the utensils were washed, and in 16 instances the intentional



MEAN DEATH RATES FROM TYPHOID FEVER, 1902 TO 1906, IN 66 AMERICAN CITIES AND 7 FOREIGN CITIES. GROUPED, AFTER FUERTES, ACCORDING TO THE QUALITY OF THEIR DRINKING WATER. THE RATES FOR FOREIGN CITIES ARE TAKEN FROM JAMES H. FUERTES.

dilution with polluted water is a matter of evidence. In 7 instances the infection is attributed to the cows wading in sewage-polluted water and meadows, and it is quite conceivable that the germs clinging to the udder and teats found their way into the milk. In 4 instances the infection was spread through cream prepared in infected premises. In 7 instances through creameries. In one instance the milk tins were washed with the same cloth used among the fever patients. In other instances the germs were probably carried into the milk by flies passing from the infected excreta. In 24 instances the people handling the milk also acted as nurses. In 10 instances patients while suffering from mild attacks, or during the first ten days of their illness, continued at work. From what has been said of the danger of soiled hands, we may assume that the germs in all such instances may be conveyed in the manner already explained.

In like manner a "chronic bacillus carrier" may convey the germs by soiled fingers into the milk. This mode of infection was strongly suspected ever since Dr. Soper, of New York, traced a number of household epidemics to an infected cook,* and also by a very interesting instance reported by Dr. Henry Albert, occurring in the fall of 1907, at Cedar Falls, Iowa. The possibility of spreading the disease by such a carrier has been materially strengthened by a study of a milk-borne typhoid epidemic in this city in October, 1908. Surgeon-General Wyman's report says, "Twenty-six cases of typhoid in Georgetown, occurring between October 8th and 15th, were traced through the milk to the dairy farm. On close inspection of this dairy farm no case of typhoid fever for years could be found to have occurred among any of the employees, nor was any other source of infection discovered until after a systematic examination of dejecta of all the employees had been made in the hygienic laboratory.

"This examination developed large numbers of typhoid bacilli in the dejecta of one woman who had had typhoid fever eighteen years before, and was one of the milkers of the dairy. Persons thus affected are known to the medical profession as typhoid bacilli carriers, but this is the first considerable outbreak of typhoid in the United States traced through milk to such a carrier, excepting the case reported by Dr. Henry Albert, of Iowa, in the 'Hygienic Laboratory Bulletin,' on 'Milk and its Relation to the Public Health,' published last January.

"The case just discovered is deemed of special interest to health officers in their endeavors to trace the source of typhoid outbreaks when that source seems to be obscure. At least 2 per cent of all recovered cases of typhoid fever become bacilli carriers for a longer or shorter period, even while enjoying good health. Ten per cent of the cases of typhoid fever in Washington during the past three years have been definitely traced to infected milk."

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*"Journal American Medical Association," Vol. XLVIII, No. 24, p. 2019.

This instance is of extreme interest and certainly suggestive of danger, but scientific critics may be tempted to ask: 1st. If this woman was the only possible source of infection, why did she not infect the consumers of the milk before? unless, indeed, it can be shown that she had a recent re-infection. 2d. Were the typhoid fever germs actually found in the milk? 3d. If not, why was there no effort made to demonstrate experimentally that this woman with the careless toilet habits could infect her hands and through it the milk? And, 4th. Have all other local sources of infection in Georgetown been effectually eliminated?

The evidence on milk infections shows how important it is for us to bring our milk to the boiling point (scalding), which will kill the germs. In this connection it is interesting to note that, of the 330 milk epidemics (typhoid, scarlet fever and diphtheria) collected by the writer, 243 have been recorded by English authors, 52 by American, 14 by German, 11 by Scandinavian and 5 each by French and Australian writers. This is probably due to the fact that the English and Americans usually consume raw milk, while on the Continent milk is rarely used without being first boiled.

About 15 per cent of all typhoid cases are brought to the city from summer resorts and rural districts, and about 20 per cent may be spread through the agency of flies, personal contact, the consumption of raw oysters and shell fish raised in sewage-polluted waters, or the eating of strawberries, radishes, celery, lettuce and other vegetables and fruits which have been contaminated with infected night soil. Hence the importance of carefully washing all uncooked articles of food.

Typhoid Fever in the Rural Districts.

There is much reason for assuming that the undue prevalence of typhoid in rural districts is a fruitful source of infection to the urban population, chiefly through the milk supply and summer boarders.

When we consider the fact that over 70 per cent of our population resides in rural districts, that the "bone and sinew" of these are engaged in agricultural pursuits, and that they do not enjoy the benefits of enforced sanitation by local health boards, we see at once the desirability of the family physician extending useful suggestions on healthful building sites and homes, disposal of house wastes, the importance of a pure water supply, wholesome and properly cooked food, etc. As it is now, the diet is faulty, especially the hot biscuits and greasy fried dishes, while wells and privies are often dangerous neighbors, favoring the spread of filth diseases. The undue prevalence of typhoid fever could be materially checked by chemical disinfectants, or by adding to the discharges four or five times the quantity of boiling water kept in contact for at least ten minutes. While prompt disinfection of the excreta is of vital importance we should also make an effort to get rid of the flies by prompt disposal of the horse manure in which they breed, the abandonment of open privies and surface pollution, substitution of the dry earth closet, or other rational methods for the collection and disposal of excreta, removal of garbage, etc.

PREDISPOSING CAUSES TO TYPHOID FEVER.

The writer, in his investigation of 500 cases in 1895, found that in a large number of cases, especially in the southwest and along the eastern branch of the Potomac, the system was very much debilitated by the malarial cachexia prior to the attack. What effect the James Creek canal, the backing up of sewage and consequent flooding of uncemented basements and cellars, or the emanations from the filth-reeking shores may have had, as a contributory factor, it is difficult to say. We know, however, that marshes breed mosquitoes, which are the carriers of malaria, and that apart from the unwholesome emanations, the evaporation of water also increases the humidity of the air and thus intensifies the effects of both heat and cold, all of which can not fail to lower the power of resistance to disease. For these reasons his 5th recommendation, submitted in 1895, referred to sanitary measures looking to the reclamation of the stagnant and polluted marshes and the prompt disposal of sewage.

In this connection let us remember, however, that while the Anacostia flats are productive of disease, directly and indirectly, similar effects, differing only in degree, may be produced by filthy homes, back yards and stagnant pools of water within the city limits.

The same report, on page 261, says: In addition to the germ, there must also be a suitable soil for its proliferation in the system and this individual predisposition or vulnerability, which renders the body more liable to be acted upon by the germs, may be the result of debility, faulty nutrition, fatigue, excesses of all kinds, abrupt changes in temperature, impure air, mental depression, unwholesome food and many other factors calculated to diminish the power of resistance of the individual.

The factors of environment and other predisposing causes are plainly revealed by the undue fatality in the colored population. The average typhoid death rate among the colored during the past ten years was 76.4, as compared with 47.4 for the whites.

Many of the factors concerned will be alluded to on page 120, and much may be done by uplifting influences and higher standards of living towards the removal of the predisposing causes of typhoid fever.

WHY IS THERE MORE TYPHOID FEVER IN WASHINGTON THAN IN NORTHERN CITIES?

Now that we have a pure water supply this very pertinent question has been asked, and among the answers so far given may be mentioned the following:

(1) Washington, like very many other southern cities, has a very large colored population, with their greater susceptibility to disease. This, however, accounts for only a certain percentage of the excess, as the rate for the white population is also abnormally high.

(2) It is a well-known fact that all intestinal diseases are especially prevalent in hot climates and seasons. This is probably due to the fact that the blood is kept too long at the periphery on account of excessive perspiration, and the stomach and other internal organs suffer in tone and nutrition for want of adequate blood supply, and can not exert their normal defensive forces.* So, for example, typhoid fever germs would be digested, like many other vegetable cells, as long as the digestive functions are normal, but if for any reason this function is impaired or arrested, this defensive force ceases, and the way for infection is open. Functional derangements of the stomach, together with the debilitating influences of heat, doubtless play an important role in increasing the general susceptibility to typhoid fever in all southern climes.

(3) Dr. Woodward, our Health Officer, suggests that the greater intensity of heat in the South leads to the ingestion of larger quantities of water than are consumed farther north, and, therefore, so far as water-borne typhoid fever is concerned, to increased chances of infection. He also suggests that "intensity of heat and the long duration of the heated season probably lead to a more rapid and more extensive lowering of the water in the streams and wells than occurs in cooler regions, and thus lead to a greater concentration of infectivity, if the water in such streams and wells are infected. The temperature of the water in such streams and wells may be better suited to the life of the typhoid fever bacillus than is the temperature of northern waters. Moreover, owing to the greater duration of the summer season, the fly season is longer, and the periods during which the diet of the people consists

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*See page 78, Kober's "Industrial Hygiene."

largely of uncooked articles is correspondingly extended. The chances of infection are, therefore, correspondingly increased in so far as relates to infection through foods. Still it would be but poor comfort to know that, because Washington is a Southern city it must continue forever to pay its death toll to the typhoid fever Juggernaut; the problem must not be solved in that way. But the problem is not yet solved, nor is it likely ever to be solved until the investigation is taken up along broader lines than any that have yet been adopted; that is, until the investigation into the causes of the undue prevalence of typhoid fever in this District is made to include an investigation into the causes of the prevalence of typhoid fever elsewhere, so that by a process of comparison and exclusion the cause for the excessive typhoid fever rates in the District of Columbia can be ascertained."

PREVENTION OF TYPHOID FEVER.

The writer, in his report on typhoid fever in 1895, referred in his concluding recommendation to thorough disinfection of the excreta from all typhoid fever patients and greater care on the part of those connected with the sick. We have known for over 25 years that the typhoid germs are conveyed chiefly through the feces and urine of infected persons, that they are capable of reproduction within and without the body, unless killed by certain physical or chemical agents. We have already mentioned that even the addition of four or five times the volume of boiling water to feces or urine will effectually destroy the vitality of the germs. If chemical agents are used the method must be thorough and exact. The attendant must prepare and use germicidal solutions of standard strength, and unless this is done the whole process is a snare and delusion. So, for example, all vessels containing stools should be filled with a double volume of a solution of chloride of lime (6 ounces to the gallon), or a 5 per cent solution of carbolic acid, 6 ounces to one gallon of boiling water, or a corrosive sublimate solution, 60 grains of corrosive sublimate, 2 teaspoonfuls of table salt to one gallon of water, or any of the standard disinfectants; and kept in a covered vessel for at least one hour before emptying. Disinfection must also extend to the patient's soiled body, clothing and bedding, and to the hands of the nurse. If this is not done there is danger from so-called contact infection. Infected fingers may contaminate the food, while a fly alighting upon a soiled part may carry the germs on its feet to the food and drink of the other inmates or even to some neighboring houses. Prompt and efficient disinfection will destroy the principal sources of infection, and if carried out universally, would go far towards removing typhoid fever from the face of the globe. That this is possible is shown by the fact that the typhoid rate in Berlin has been reduced from 142 per 100,000 of population in 1872 to 5 in 1906.

The causes of typhoid fever in this city are perhaps more complex and varied than elsewhere, no one factor can alone be held responsible for its undue prevalence, and in the prevention of the disease due attention must be paid to the removal of all the causes likely to influence its spread.

Among the sanitary measures which should be invoked are the following: The expenditure of $100,000 asked for by Major Cosby for the perfection of the quality of the filtered water. While the installation of the filtration plant has resulted in an improved water supply, it is found that during periods of great turbidity, especially during the months of December and January, the number of bacteria remaining in the effluent exceeds permissible limits. It has also been shown that the efficiency of the filters, as regards removal of bacteria, can not be increased without previous chemical treatment of the water at such periods. In view of the fact that the degree of danger varies with the number of bacteria left in the water, no effort should be spared to eliminate these high counts by the methods proposed by the engineer in charge.

The prevention of river pollution involves problems which should be solved in the interest of this and other communities using a public water supply from interstate rivers, under which circumstances the inhabitants of one commonwealth are powerless to protect themselves against the misdeeds of their neighbors.

The abandonment of public and private wells and box privies, wherever found; the removal of slums, insistence upon clean homes, back yards, basements, cellars, alleys, streets and vacant lots, and more stringent laws for the production and sale of milk and cream, together with the reclamation of the Anacostia Flats can not fail to diminish some of the contributory factors in the prevalence of the disease.

Many of these measures have been urged by the Commissioners and the Health Officer for years, and it is the duty of every good citizen to strengthen their hands in their well-directed efforts. In addition to all this, there is special need for more visiting nurses and social workers to instruct our neglected neighbors in higher standards of living, and finally, more attention should be paid in our schools to hygienic and sociological questions, so that the average child may learn the essentials for the preservation and promotion of health.

DIARRHEA AND DYSENTERY.

Whilst diarrhea is a symptom of very many diseases, there is reason for believing that certain forms, occurring in infants as well as adults, towards the middle or close of a hot, dry summer, are caused by the consumption of tainted food, milk, impure water, etc., superinduced by putrefactive bacteria, and that the serious forms of summer complaints are due to specific germs.

From what we know of the nature and cause of dysentery we are led to consider it an infectious disease, which is spread very much like typhoid fever. The tropical form of dysentery is caused by an ameboid organism, while the type most prevalent in this country is due to a bacillus.

In our present state of knowledge we may conclude that the virus of dysentery, whether of the bacillary or amebic type, proceeds from the intestinal discharges of a previous case, and the most usual mode of transmission of the germs is through the water supply. This is the opinion of Virchow, based upon personal experience in Egypt, and Uffelmann has frequently observed that persons using boiled water during a dysentery epidemic remained exempt, and that the simple closing of a suspicious well often checked the spread of the disease. It is also perfectly conceivable that the germs may be spread through soils strongly polluted and infected with excrementitious matter, and with particles of dust gain access to milk, fruit, fresh vegetables, etc., which are eaten raw. The agency of flies in carrying the germs from infected sources to the food supply cannot be ignored.

Temperature also plays an important role in the development of the disease. At all events, statistics show that in temperate climates the disease assumes epidemic proportions in July, August and September, and declines with the approach of cold weather; it goes hand in hand, therefore, with a maximum temperature of the air and soil. It is also a clinical fact that badly nourished individuals, and those suffering from indigestion or intestinal catarrhs, are especially liable to be attacked.

Prophylaxis: In the attempt to prevent epidemic extensions of these diseases the water supply should be looked after, and every source of contamination of wells, springs and public reservoirs must be avoided, and suspicious supplies closed.

The public should be enlightened as to the nature of these diseases, and especially of the necessity for prompt disinfection of stools. It should also be informed that indigestion, the result of indiscretion in eating and drinking and chilling of the body, increase the susceptibility; that it is desirable during the prevalence of these diseases to use only boiled water and milk, and to avoid the consumption of raw vegetables and fruit, unless they have been thoroughly washed with water previously boiled.

INFANTILE MORTALITY.

According to Oesterlein's statistics it is safe to assert that the average death rate during the first year of life is 188 out of 1,000 infants born.

According to the census of 1900 the infantile mortality per 1,000 births in the so-called Registration States was as follows:

District of Columbia	274.5
Rhode Island	197.9
Massachusetts	177.8
New Hampshire	172.6
New Jersey	167.4
New York	159.8
Connecticut	156.8
Maine	144.1
Vermont	122.1
Michigan	121.3

It will be seen that the rate of Vermont and Michigan is less than one half that of the District of Columbia.

The rates in foreign countries likewise vary considerably. In France the average rate from 1874 to 1893 was 167; in 1903 it had fallen to 137, practically the same as that of New Jersey.

According to Harrington* our highest rate about equals Russia, and it is not much greater than that of Austria. Rhode Island makes a better showing than Germany and Italy. The German rates for the five years 1901-1905 were as follows: 216, 184, 202, 204, 204. The Italian rates are 170. Maine stands with England and Wales, and better than Belgium and the Netherlands. The rates for England and Wales are 150; Belgium 156; The Netherlands 147. The rate of Vermont is lower than Scotland (126), Denmark (127), Finland (134), or Switzerland (144). Michigan is also lower than Scotland (126). The following countries have lower rates: New South Wales, 108; Victoria, 105; Ireland, 105; South Australia, 102; Queensland, 101; Sweden, 98; Norway, 90; New Zealand, 79.

These are mean rates for rural and urban districts. In towns and cities the mortality is always higher, amounting to 33.6 per cent, as compared with the rural mortality of 27.8 per cent.

The District of Columbia in 1900 had the unenviable reputation of leading the list of the Registration States in Infant Mortality, but the rate of Washington as a city compares favorably with other cities.

The census of 1900 gives a list of 106 cities and towns with infantile death rates in excess of 175. In 9 cases the rate exceeded 300; in 38 it was between 200 and 280, and in 49 it was between 175 and 200.

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*Harrington, Infantile Mortality, "Am. Jour. Med. Sc.," December, 1906.

The following is a partial list of these cities:

Charleston, S. C.	419.5	Norfolk, Va.	284.6
Savannah, Ga.	387.5	Lowell, Mass.	275.5
Mobile, Ala.	344.5	Washington, D. C.	274.5
Key West, Fla.	311.8	Baltimore, Md.	235.1
Biddeford, Me.	311.6	New Orleans, La.	229.2
Atlanta, Ga.	306.0	Detroit, Mich.	201.2
Fall River, Mass.	304.7	Philadelphia, Pa.	201.9
Lynchburg, Va.	301.7	Newport, Ky.	189.8
Richmond, Va.	300.7	Indianapolis, Ind.	173.5
Laconia, N. H.	294.6	Kansas City	168.8
Shreveport, La.	293.5	Springfield	167.4
Jacksonville, Fla.	287.6	New York	189.4

The following is a list of 24 German cities with excessive infantile death rates:

	Infantile death rate.	Diarrheal Infantile death rate.	Percentage of Infantile deaths due to diarrheal diseases.
Chemnitz	270.99	135.67	50.07
Stettin	260.54	112.28	43.09
Posen	248.29	92.52	37.27
Nuremberg	247.53	113.80	45.97
Breslau	244.39	98.62	40.36
Dantzig	243.19	109.87	45.18
Halle	235.71	124.77	52.94
Magdeburg	233.52	100.73	43.14
Konigsberg	233.25	113.47	48.65
Leipzig	222.14	121.49	54.69
Rixdorf	218.49	103.66	47.44
Munich	217.39	95.33	44.14
Cologne	212.45	93.60	44.06
Plauen	208.01	35.25	16.95
Stuttgart	205.63	74.80	36.88
Manheim	203.67	86.46	86.46
Berlin	199.83	87.99	44.03
Brunswick	196.64	81.22	41.32
Aachen	195.12	78.60	40.28
Dresden	191.29	83.23	43.51
Strassburg	190.45	92.82	48.74
Dusseldorf	187.97	82.43	43.85
Karlsruhe	185.12	86.17	46.55
Dortmund	184.96	61.75	33.38

In 1904, in the 323 German cities and towns having populations exceeding 15,000 the rate was 202. In the 12 months ended June 30, 1906, the rate in 32 German cities with a population of over 100,000 the rate was 198. (Harrington.)

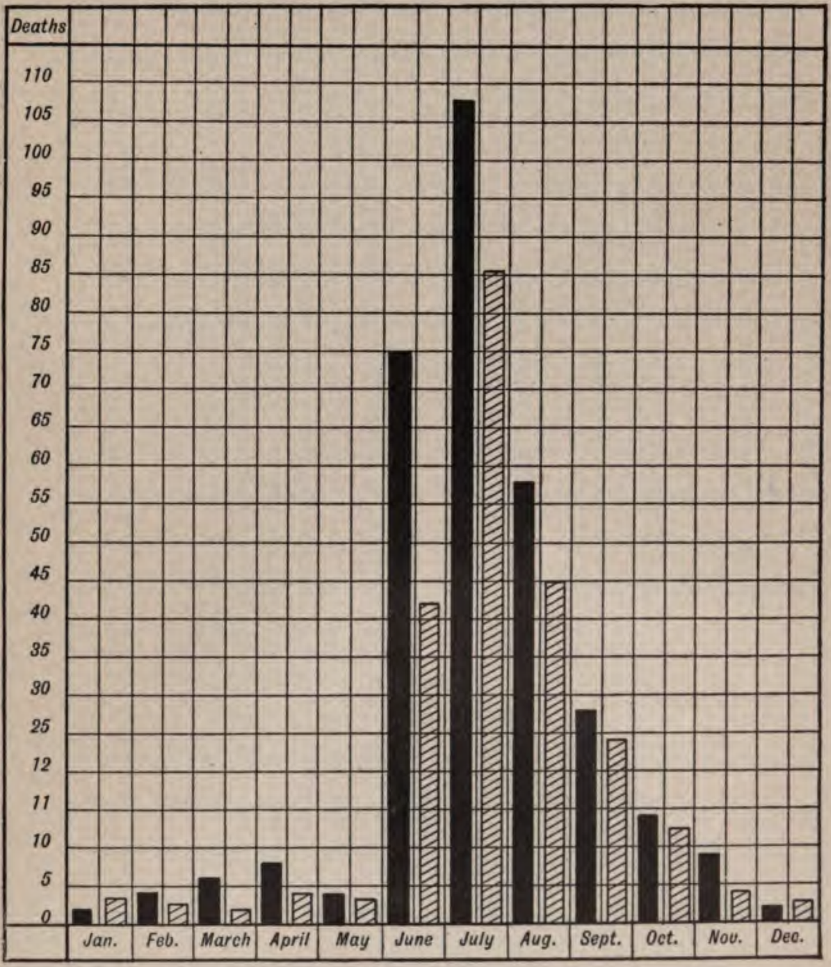
From the foregoing figures it appears that in many cities, out of every 1,000 children born alive, over one-third perish before the completion of the first year; but fortunately for the perpetuation of the human race the average infant mortality all over the world is only about one sixth of those born.

Of the twelve months during the first year of life the first month furnishes the highest mortality. Of the 1,233 infantile deaths reported in this city in 1906, 222 were due to premature birth; 40 to congenital debility; 28 to malformations, and 9 to difficult labor. The first month is followed by the second, third and fourth months, probably also because of diminished vital resistance. The tenth, eleventh and twelfth months are also dangerous months, as this is at the usual period of weaning with its attending danger from digestive diseases incident to artificial feeding. We have already referred to diarrheal diseases as the principal cause of infantile mortality. A mortality of 40 per cent from diarrheal diseases, and 2.5 per 1,000 from tubercular diseases of the abdominal lympathics and glands can not fail to claim our attention, and certainly points, with more than mere suspicion, to the fact that the morbific agent in these cases is introduced into the body with the food, especially unwholesome and infectious cow's milk. Nor is it improbable that the 21 per cent who die from affections of the respiratory organs are largely the victims of ignorance as regards temperature and clothing and other environments of the child. The infant mortality is everywhere influenced by extremes of heat and cold, but the hot months, like July, August and September, are the most dangerous on account of the disastrous attacks of diarrheal diseases. The fatal influence of heat is graphically shown in the accompanying chart. (See next page.) The deaths from diarrheal diseases ranged according to months, from 5 in January to 108 in July, and 58 in August, after which there is a rapid decline. The same abrupt changes are noted in the large statistical material of German cities in 1905, dealing with 128,035 deaths under one year, the deaths from diarrheal diseases ranging from 1,192 in January to 15,863 in August.

High infantile mortality rates have always been considered the opprobrium of the healing art. Dickson asked over fifty years ago, "How shall we prevent the early extinction of half the new born children of men?" While powerless to solve all the mysteries connected with this subject, an attempt will be made to answer the practical question. Can they be reduced? Space will not permit to enter into details of infant hygiene, but we must at least point out the fact that the mortality can be greatly reduced by improving the original stock, i. e., the physique and habits of the parents, and placing them, as well as their offspring, under more suitable environments, especially with reference to fresh air, sunlight, exercise, suitable clothing, and habitations, and last but not least, proper food.

The influence of favorable hygienic conditions was demonstrated by

MONTHLY DEATHS FROM INFANTILE DIARRHEAL DISEASES DURING 1906 COMPARED WITH AVERAGE MONTHLY DEATHS FOR PAST TEN YEARS.



■ *Deaths from Diarrheal Diseases during 1906.*

▨ *Average annual deaths from Diarrheal Diseases for 7 years.*

Reproduced from Report of the Health Officer, District of Columbia, 1907.

Casper's statistics, published as early as 1825, showing that the infant mortality rate among royal children was only 57, as compared with 345 per 1,000 among the infants of the poor. Of 170 deaths from infantile diarrhea, investigated by Helle in Graz in 1903 and 1904, not one belonged to a rich family, and but 9 to the well-to-do class, while 161 belonged to the poor and the very poor. Clay calculates that of every 100 children born in England, 90 will be alive at the end of the first year of those born in aristocratic families; 79 in the mercantile class, and 68 among the laboring classes. The relation of infantile mortality to the occupation of the women has already been discussed in a previous report.

Dr. George Reid, at the National Conference on Infantile Mortality, held in London in June, 1906, contrasted the infantile mortality in two districts, identical in health conditions, but with the important difference that in one women are largely employed in industrial pursuits, and in the other there is practically no employment for them, with the result that the infantile mortality varied from 149 to 198 per 1,000.

The infantile mortality returns in the United States, also, indicate that we are dealing with a class mortality, which is highest in communities where women are employed in mills and other gainful occupations, and in consequence the children fall victims to ignorance and neglect. Contrast, for example, the census rates for 1900 of Fall River, Mass. (304.7); Lowell, Mass. (275.5); Nashua, N. H. (261.2); Lawrence, Mass. (246.5); Manchester, N. H. (238.4); all typical mill towns, with the rate at Cambridge, Mass., which was 186.5. The seasonal and climatic influences are, of course, the same, and presumably, also, the general quality of the milk supply, hence we must look largely to sociological factors for an explanation, such as has been offered on pages 68-70,* and may be summed up in ignorance and poverty. The same explanation applies to the excessive rates among colored infants in many of our States and in our own city. During the year 1906 the number of children under two years of age who died in Washington from diarrheal diseases and inflammation of the bowels was 318, 146 white and 172 colored. The corresponding death rate per 100,000, calculated on the basis of the entire population, was for the white population 63.1 and for the colored population 181. If any further argument is necessary to show the influence of sociological factors, it will be found in the fact that 1,792 of the 2,711 infantile deaths, investigated by Neuman in Berlin in 1903, occurred in one-room dwellings, 754 in two-room, and 165 in three-room and larger dwellings.

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*Kober's "Industrial Hygiene."

The difference in the mortality of legitimate and illegitimate children is very great and varies, according to Uffelmann, as follows:

	Legitimate Children per cent.	Illegitimate Children per cent.
In France	15.0	30.0
In Austria	22.9	35.1
In Sweden	13.0	24.8
In England	14.0	35.0

But the most frightful mortality rates are everywhere furnished by the hand or bottle fed children.

Dr. Newsholme,† the Medical Officer for Brighton, England, states that breast-fed infants contribute but one-tenth of the deaths from infantile diarrhea. W. J. Tyson‡ asserts that three fourths of the 150,000 infantile deaths in Great Britain are bottle-fed. Indeed, we have evidence that of the 54,047 infantile deaths which have been investigated at home and abroad with reference to feeding, 86.6 per cent had been artificially fed, all of which points to the fact that the quality of the food, chiefly cow's milk, in hand-fed children, plays the most important role. This assumption finds, moreover, support by the fact that the infantile death rate, and diarrheal diseases, in children under five years of age, have materially decreased in a number of American cities since the enactment of pure-milk laws, notably in Buffalo, Rochester, Chicago, New York and Washington. The Report of the Health Officer of the District of Columbia for 1906, page 11, says: "High as is the infantile mortality rate even now from diarrhea and inflammation of the bowels, it is far below the figures that formerly prevailed. During the five-year period, 1880-1884, the death rate from diarrhea and inflammation of the bowels among children under 2 years of age was 162 per 100,000 per annum. During the five-year period, 1885-1889, the average annual rate was 168. During the next period, 1890-1894, the death rate rose to 175, but in the year 1895 a diminution began. During the period 1895-1899 the death rate from the diseases named was only 135; in the period 1900-1904 it was only 109; in 1905 it was 104, and in 1906 it was only 97.

"The only explanation for the fall in the death rate from infantile diarrhea that I have been able to discover is the enactment, on March 2, 1895, of the law regulating the sale of milk in the District of Columbia, and the establishment of dairy and dairy farm inspection under the provisions of that law. * * *"

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†"Journal of Hygiene," April, 1906.

‡"Journal of State Medicine," September, 1904.

MATERNAL NURSING.

The mortality statistics in hand-fed children are the most eloquent arguments which can be offered in favor of breast feeding.

Recent statistics collected by Von Bunge in different parts of Europe indicate that probably 75 per cent of the women could nurse their children. Budin asserts that 448 out of 557 women who attended one of the Paris clinics were able to nurse their children. Madame Dluski, in an able thesis, maintains that of every 100 healthy women, when the necessary conditions of alimentation and repose are present, 99 are actually able to nurse their offspring. The importance of maternal nursing is emphasized in different parts of Europe by popular education, and by the enactment of laws requiring, in industrial establishments where 50 or more women are employed, special rooms for maternal nursing. On the other hand, statistics collected by Hegar in large obstetrical institutions in Germany indicate that only about 50 per cent of women are capable of nursing their offspring for merely a few weeks, and the question naturally arises: What are the causes of this inability to discharge their sacred maternal duties? Among them may be mentioned physical inability as a result of insufficient or improper food, hard work, care, hereditary debility and disease, tuberculosis, alcoholism of the woman's own father, modified syphilis, or nervous diseases in the family. Von Bunge believes that, apart from actual disease in the mother, alcoholism is one of the chief causes, as the daughters of the third generation of alcoholics are usually unable to nurse their offspring. The effects of hard work and gainful occupations have been pointed out,* but there is absolutely no excuse for mothers who, although physically able-bodied, are disinclined to nurse their children, chiefly as a matter of ease, comfort and social pleasures, and who, instead of employing a healthy wet-nurse, prefer artificial feeding, and often resort to patent baby foods.

Dr. Henry D. Fry,† Professor of Obstetrics, Georgetown University, in his excellent monograph on Maternity, states that such foods are more often the cause of scurvy than other nourishment. On page 149 he says: "Pictures of fat babies smile at us from the pages of newspapers and magazines, and the advertisements say they were raised on this or that food product. Unfortunately, many babies have been raised to 'worlds unknown,' but we do not see their pictures. The evidence of this must be sought in grave yards, where tombstones bear silent witness to the high rate of mortality in early life." These remarks are equally applicable to the pernicious use of "soothing" and "teething sirups," "babies' friend," etc.

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*Kober's "Industrial Hygiene," p. 68.

†Fry, Henry D., "Maternity," 1907.

Professor Jacobi* offers some excellent advice when he says: "Infants are the future citizens of the republic. Let the republic see that no harm accrue from the incompetence or unwillingness to nurse. * * * From a physical, moral and socio-political point of view, there is only one calamity still graver, that is to refuse to have children at all. * * * The human society of the future will have to see to it that no poverty, no cruel labor laws, no accident, no luxurious indolence must interfere with the nursing of infants.

"We are building hospitals for the sick of all classes; asylums for the insane, neuropathics and drunkards; nurseries and schools for epileptics, cretins and idiots; refuges for the dying consumptives, and sanatoria for incipient tuberculosis. We are bent upon curing and upon preventing. Do we not begin at the wrong end? We allow consumptives and epileptics to marry and to propagate their own curse. We have no punishment for the syphilitic and gonorrheic who ruins a woman's life and impairs the human race. Man, however, should see that his kind must not suffer. One-half of us should not be destined to watch and nurse and support the other half. Human society and the State have to protect themselves by looking out for a healthy, uncontaminated progeny. Laws are required to accomplish this. * * *"

As a matter of fact, Indiana, Wisconsin, Michigan and Connecticut have laws prohibiting the marriage of epileptics. Indiana also prohibits marriages of persons suffering from transmissible diseases and, by an act of 1907, "confirmed criminals, imbeciles, idiots and rapists, procreation by whom is deemed inadvisable by experts, shall be unsexed by surgical operation."

Until there is greater perfection in the physical, moral and economical conditions of the human race, there will always be a large percentage of infants deprived of their natural food. In order to appreciate the dangers of artificial feeding it may be well to point out briefly some of

THE ANATOMICAL AND PHYSIOLOGICAL CHARACTERISTICS OF INFANTS.

The average weight of a healthy new-born male child is 3,500 grams, and of a female 3,000 grams; at the expiration of the first month the child should weigh about one-third more than at birth; during the middle of the fifth month it should have doubled its weight and at the completion of the first year it should weigh three times its original weight.

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*The History of Pediatrics, etc., "Jour. Am. Med. Assoc.," November 5, 1904.

At the end of the second year the normal child should weigh about 12,000 grams, or a little over 26 pounds. Any decided variation should cause the mother to seek proper advice. It should also be remembered that the anatomical elements of the digestive tract of infants are very delicate and vulnerable and especially susceptible to injurious influences, such as cold or improper food, atmospheric temperature, etc. The saliva, up to the tenth month, is scant and incapable to any considerable extent of converting starchy food into sugar, a property only fully developed about the expiration of the ninth month.

The muscular coats of the stomach are delicate and vomiting is easily provoked; the gastric glands secrete a juice which is less acid than in after years, and the contents are passed from the stomach into the upper intestinal canal at intervals of 1¾ hours. The pancreatic juices for the first few months in life are scant and up to the fourth or sixth week incapable of converting starch into sugar, but fully prepared to digest the proteids and fats of the milk. The stools of a normal infant scarcely exceed two or three during the 24 hours; they are of a semi-unctuous consistency and orange or egg-yellow in color.

There can be no question that the natural food is breast milk from a healthy mother—no other food insures to the same extent the physiological development of the child. A normal infant requires a daily supply of milk to the amount of about one-seventh of its weight.

The average composition of human milk, after the regularity of lactation has been established, is about as follows: Water, 87.30 per cent; proteids, 1.5 per cent; fats, 4.00 per cent; sugar, 7.00 per cent; and mineral salts, 0.20 per cent. The composition of the milk is by no means constant, and is influenced by a number of factors, such as the age of the mother, food, habits, emotions, race, physical peculiarities, etc. The digestibility of human milk is nearly perfect, as 97 per cent is generally utilized; all of the constituents are absolutely essential to health and a proper growth of the body.

CARE OF THE BREASTS.

The mother should take special care of the nipples and breasts and can prevent much physical suffering, from local inflammatory affections, by washing the parts after each nursing with plain water, and careful drying.

It is very doubtful whether the practice of washing the nipples during the last three months of pregnancy with alcoholic and astringent lotions is productive of good; indeed, Professor Fry* believes they are harmful by drying up the secretions of the sebaceous glands and making them more liable to crack, and he recommends instead the application of cocoa butter, lanolin, albolene, vaseline or castor oil.

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*Fry, Henry D., "Maternity," 1907.

Much can be done at the outset in preventing sunken or depressed nipples by avoidance of tight clothing, but when they do occur they should be treated by the attending physician.

FREQUENCY OF NURSING.

There is nothing to justify the frequent practice of administering to new-born infants different teas and sweetened water during the first few days after birth. Plain boiled water, at a temperature of 99, may be given; but above all we should endeavor to establish regular habits at the outset, and avoid overfeeding. Professor Heubner believes that the number of feedings heretofore advocated is too great, and a less number is productive of better results. In this he is supported by other competent observers, and Dr. Schereschewsky,* in his excellent article on "Infant Feeding," gives the following schedule, which seems to fulfill the best practice in this direction:

Age.	Number of Nursings in 24 hours.	Interval during day.	Night.
First day	4	6	1
Second day	6	4	1
Third to twenty-eighth day	8	2½	1
Fourth to thirteenth week	7	3	1
Third to fifth month	6	3	0
Fifth to twelfth month	5	4	0

The infant during the first four or five days after birth usually loses about 8 per cent of its weight. It should then regain lost weight and continue to gain at the rate of 120 to 150 grams (4 or 5 ounces) every week during the first three months, and from the third to the sixth month it should gain about 100 to 120 grams or from 3½ to 4 ounces each week.

By weighing the baby regularly we can judge with precision of its general progress. Professor Fry† says: "A baby that is at a standstill or losing weight is not getting enough food. Crying under these circumstances means more food or a better quality of the food." In order to differentiate between the cries of hunger, colic or earache, he points out that a hungry baby cries after it has been nursed and cries before the next feeding. He suggests placing the finger in its mouth, when it will stop crying and suck it for a moment and then cry again at its disappointment. "Nursing babies may be starving in spite of an abundant

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*Bulletin 41, Pub. Health & Marine Hospital Service, 1908.
†Maternity.

secretion of breast milk. The fluid may be abundant in quantity but poor in quality. The nutritive value of breast milk can be ascertained by a simple method. Draw off some and let it stand in a test tube over night. If normal a good layer of cream will form on top—from 3 to 4 per cent. If poor the color is pale blue at first, the next morning watery, and the cream will be only one per cent or a little more. Very bad milk will show less than one per cent of cream. Again, a starving baby is not nourished properly. To find this out examine the skin over the tibia (shank). If the baby is not getting enough nourishment the skin can be pinched up with the fingers; if properly nourished the skin is firmly attached to the underlying tissue and the grasp of the fingers slips over it. This point is demonstrated by examining the skin on the back of any one's hand. Extend the fingers and the skin is easily picked up, like that over the tibia of a starving baby. Close the fist and the skin is tight, as one will find it over the shank of a properly nourished baby."

WEANING OF INFANTS.

It is believed that a normal woman who enjoys a good appetite and a supply of good wholesome food, obeying the ordinary rules of health, will have no difficulty in discharging her maternal duties. Nature probably intended that the infant should subsist upon breast milk until the eruption of the first molars, and many mothers actually nurse their offspring until the twelfth or fifteenth month.

If we can appoint our own time, the weaning should be gradual and not considered before the tenth or twelfth month, especially not during the hot months, provided the health of the mother is good and the child is doing well. It would be very unwise to wean a sick child unless the sickness is caused by the mother's milk.

An inadequate supply of breast milk can be made up by mixed feeding, and surely even a half supply of normal mother's milk for sick children is better than a full supply of prepared milk.

CONDITIONS WHICH MAY COMPEL RECOURSE TO ARTIFICIAL FEEDING.

Unfortunately, there are a number of reasons which may render the employment of a wet-nurse or recourse to artificial feeding imperative at any period of lactation:

1. A motherless child, or when the mother is suffering from an infectious or communicable disease, such as typhoid fever, pneumonia, etc. A tuberculous mother would not only aggravate her disease but also expose the child to infection.

2. Childbed fever and other severe complications of the parturient state, such as hemorrhages, convulsions, inflammation of the kidneys; also

in anemic and in cachectic and serious nervous conditions, such as chorea and epilepsy.

3. Inflammatory conditions of the nipples and breast, because of the admixture of pus and disease germs.

4. When no milk is secreted, and deformities and anomalies of the nipple and breast exist which can not be corrected.

5. Return of menstrual period or early pregnancy, if resulting in digestive derangements or malnutrition in the child.

If under such circumstances the employment of a wet-nurse is impracticable, artificial feeding must be considered and the question confronts us, What is the best possible substitute for human milk, the requirements of which are:

1. That it must offer the same character and amount of nutritive elements and in the same proportion as human milk.

2. The nutritive elements must be present in the same digestible form and of the same consistency, and should be introduced into the stomach at a temperature not less than 98 degrees F. by means of slow suction at proper intervals.

3. This substitute must not contain any morbific or infective agent, whether originally present or introduced during the preparation or keeping of the same.

A moment's reflection upon the physiology of infantile digestion will at once suggest the propriety of rejecting all starchy foods before the expiration of the tenth month, except in very limited quantities and previously converted into maltose by boiling, as in barley water. Since milk is the natural food of all mammalia few will be disposed to doubt that some modification of cow's milk offers the best possible substitute.

COMPARISON OF COW'S MILK AND HUMAN MILK.

The difference in the composition is shown in the following table:

	Woman's milk per cent.	Cow's milk per cent.
Fat	4	3.00
Proteids	1.50	4.50
Sugar	7.00	4.50
Salts	.20	.80
Water	87.30	87.20
	100.00	100.00
Calories per kilo	710.50	700.00

Human milk contains, therefore, less proteids and salts and more fat and sugar. There appears to be also a difference in the quality of the casein of the two secretions.

The addition of dilute acid in a test tube to cow's milk precipitates the casein in hard coagula or lumps, while in human milk it separates into a fine powder giving the appearance of light flocculent curds, which readily dissolve in an excess of acid. Since the coagulum in the same quantity of human milk is but one-fifth as large as that of cow's milk, this difference, which is solely one of compactness and solubility, is believed to influence the digestibility of the two secretions. This statement has been questioned, however, by Heubner, whose studies indicate that when the test-tube experiments are carried on to imitate the movements of the stomach the resulting curd is quite as fine as the curd of human milk. He also verified his conclusions by withdrawing cow's milk shortly after ingestion by infants with a stomach tube. Admitting that Heubner is correct in assuming that cow's milk contains the same constituents, but in different proportions, which can be corrected by modifying it, there still remain differences which are important, especially the fact that human milk is always fresh and, from a healthy mother, rarely contains micro-organisms, while cow's milk is never free from bacteria, and may, moreover, be the vehicle of infectious germs and other morbific agents.

Evidence That Cow's Milk May Be a Cause of Disease.

1. It has been shown that certain diseases in the cow are communicable to man through the medium of the milk. This is especially true of tuberculosis, foot-and-mouth disease, anthrax and cowpox. The writer, in 1903, published 86 cases of milk-borne tuberculosis, and Dr. Salmon has shown, from the vital statistics of Massachusetts and Michigan, that while there has been a marked reduction in the mortality of phthisis at all other ages, there has been a tremendous increase in the class under five years of age. There is also evidence to show that diseases like garget, inflammation of the udder and teats, digestive derangements and septic fevers in the cow will render the milk morbific to man.
2. It has been shown that cows which have been fed on poisonous forage plants, or have been treated with strong medicaments for any or all causes, are disqualified from producing a pure or sound milk.
3. The writer has collected and tabulated the history of 195 epidemics of typhoid fever, 99 of scarlet fever and 36 of diphtheria, all traceable to the milk supply. In a recent investigation into the causes of typhoid fever in Washington, the Bureau of Public Health definitely traced 85 out of 866 (about 10 per cent) to infected milk.

Last but not least the writer desires to emphasize two important milk faults which may be considered sources of constant danger in infant feeding, and perhaps the most important factors in swelling the mortality rates of our helpless babes, viz., milk sediments (dirty milk) and their effects on premature acidity.

Milk Sediments or Dirty Milk.

Every consumer of milk has doubtless observed the presence of more or less foreign matter at the bottom of the bottle in which it is kept; indeed, it is a matter of such common occurrence that it hardly excites our attention, and many are disposed to look upon it as a matter of course. Professor Soxhlet, of Munich, was perhaps the first to point out that these deposits are largely made up of excrementitious matter from the cow, which, adhering to the udder of the animal, gained access to the bucket during the act of milking. If these sediments are subjected to microscopical examination we will find that they are composed of epithelial debris, hairs of the cow, organic and inorganic dust particles, excrementitious matter, vegetable fibres, bacteria, fungi and spores of every description; fully 90 per cent of the germs are fecal bacilli—all of which is not only disgusting but extremely suggestive of danger. The number of micro-organisms is largely increased and we know that under a suitable temperature bacterial development and consequent decomposition are materially hastened in such a medium.

The greatest danger from milk of this class is the possible presence of ptomains or toxins produced by certain saprophytic germs acting on the albuminoids of the milk. Professor Vaughan, of Ann Arbor, Michigan, in 1885 isolated a poison called tyrotoxicon, which is one of the causes of the toxic symptoms in some cases of milk poisoning, cheese and ice cream poisoning. The presence of the very filth referred to, a summer temperature, and the pernicious habit of placing the milk before cooling in cans and bottles perhaps dirty besides, constitute favorable environments for the development of this and analogous poisons.

Germ development and acidity of the milk are influenced by temperature. Milk when it leaves the udder of the cow contains very few germs; the majority gain access during unclean handling, especially when the milking is done in a dirty stable, or from excrementitious matter adhering to the udder and teats of the animal. These germs multiply with astonishing rapidity whenever the temperature of the milk is above 50 degrees F., and if disease germs are present their proliferation augments the chances of infection. A temperature of 58 or 60 degrees F. will not subserve the interest of public health. So, for example, Petruschky has shown that at the room temperature a streptococcal content of 300 per cubic centimeter may increase in 24 hours to one of 10,000,000, but the same milk kept at 50 degrees F. yielded but 30,000, or but three one-thousandths as many.

Von Freudenreich ("Dairy Bacteriology," London, 1895) exposed a sample of milk containing 153,000 bacteria per cubic inch to a temperature of 59 degrees F.; one hour after it contained 539,750 bacteria per cubic inch; two hours after, 616,250; four hours after, 680,000; seven hours after, 1,020,000; nine hours after, 2,040,000; twenty-five hours after, 85,000,000.

Bryce, of Toronto, has made similar investigations. All of which indicates the extent of germ development which must go on in milk transported over long distances during the summer months, when the mercury ranges from 85 to 95 degrees and the cans are allowed to stand in the sun without ice; and we can appreciate why even 100,000,000 of bacteria per cubic centimeter have been found in samples of Washington milk, far exceeding the number usually found in the sewage of cities. Other cities are, however, similarly afflicted, and nothing short of clean, decent habits in handling the milk and keeping it at a temperature of 50 degrees F. will prevent the mischief. Dr. H. C. Plant, of Leipsig, found, as a rule, that in warm weather the so-called fresh milk delivered in the morning is unfit for young children, and of 47 infants whose milk supply was carefully investigated by him 18 developed serious digestive and intestinal diseases and six died. One of the chief reasons why there are less deaths from infantile diarrhea in the country than in towns and cities, in proportion to the population, is that the milk used is comparatively fresh, contains fewer germs and less toxins. Without doubt dirty and sour milk, or milk which is on the point of turning, are the chief causes of diarrheal diseases in bottle-fed children, and in the more acute cases we have the phenomena of cholera infantum, due most likely to a toxic character of the milk. These views have steadily gained ground and have resulted in great sanitary reforms in our milk establishments, the fruits of which are already apparent in the decrease of deaths from infantile diarrhea in this city. (See page 92.)

Production of Pure Milk.

The Washington market milk compares favorably with the supply in other cities; there is no evidence to show that it is worse, but there is abundant evidence to indicate that stale, dirty and infected market milk is everywhere responsible for a needless sacrifice of human life, and it is clearly the duty of the State to take what precautions it can to prevent sickness and distress.

Those who are familiar with the surroundings of our milk farms and the habits of the average dairy employee need no arguments for the necessity for sanitary reforms, and the principles which ought to be carried out should be embodied in effective laws and accepted and enforced in a practical sense. Honorable men will not object to regulations calculated to promote the purity of their product and the health of their customers, and as many of the most serious faults in the milk business are the result of ignorance rather than of intentional neglect, the difficulties will be materially lessened by proper education and trade competition.

Pure natural milk can only be secured at dairies with sanitary buildings, a pure water supply, healthy, well-fed and well-cared-for cows, a well-equipped and well-kept milk room, provisions for thorough cleanliness, intelligent and conscientious people in charge and clean methods throughout.

CERTIFIED MILK.*

It was in consequence of a just appreciation of these principles that the so-called "certified milk" came into existence about ten years ago. Responsible bodies of citizens interested in an improved milk supply organized in different cities milk commissions. Such commissions usually select and secure the advice and assistance of four experts—a veterinarian, a physician, a bacteriologist, and a chemist—all more or less familiar with the conditions and possibilities on dairy farms. The commission sends to each dairyman who supplies milk to the city a circular naming all the particular conditions which should be found on every farm where milk is produced for city use, and announcing that where any dairyman notifies the commission that he is fully conforming to the conditions specified, or endeavoring to do so, his dairy will be inspected, and, if it is found to comply in letter and spirit to all the requirements, his name will be placed upon an approved list and he will receive official indorsement to the effect that his dairy farm and the herd thereon have been thoroughly examined and found to comply with the conditions recommended by the commission. These conditions include a healthy herd, the use of pure feeds, appropriate stabling and care, pure water, and clean and prompt handling of the milk, which is of good composition and quality and so free from pathogenic and unnecessary bacteria as reasonable safeguards can provide. The attendants are cleanly and free from communicable diseases, and all milk is promptly cooled, immediately after milking, to a temperature of 50 degrees F. Every intelligent dairy farmer insists upon cooling his milk as soon as the bucket is full.

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*Extract from a Report of the Committee on Sanitary Relations to a conference appointed by the Commissioners of the District of Columbia to consider and report upon the local milk supply. The writer was chairman of the sub-committee which submitted the Report.

The inspections are made unannounced and at irregular intervals, so as to insure maintenance of the prescribed standard. Any neglected condition is immediately reported to the commission, which decides whether or not the cause is sufficient to withdraw and cancel the last certificate issued.

PASTEURIZED MILK.

It must be apparent that it will require time and education to secure compliance with even reasonable safeguards, and it is equally evident that the number of dairy farms now in a position to live up to sanitary requirements will supply but a small percentage of the population, although it is hoped that such dairy farms will be stimulated into existence by trade competition and the refusal of the public to buy dirty milk at any price. Until this is accomplished, the committee, in the interest of public health, strongly advocates clarification and pasteurization of all milk. This, to be sure, will not make bad milk good, but it will at least destroy its power to transmit disease germs.

PASTEURIZING PLANTS OR MILK DEPOTS.

Your committee also believes that this object can be most efficiently and economically secured by the establishment of a pasteurizing plant provided by the District government, or preferably by private enterprise, which plant should be under the supervision of the Health Department.

There is every argument from a commercial and sanitary standpoint in favor of a central plant, erected within reasonable distance from the union depot, where all the milk for the city should be received and prepared for distribution. Such a step would result in the creation of suitable conditions for the proper handling and storage of milk, sterilization of milk cans and utensils; and the efforts of the local milk dealers to provide decent facilities for their 150 or more dairies scattered over the city, all more or less liable to infection, could be concentrated in one plant with a decided saving of expense.

Milk should never be sold by grocery stores or milk shops unless it has been delivered to such establishment in original sealed bottles, and then only when there is provision for maintaining the milk at a temperature of 50 degrees F.

ADVANTAGES AND DISADVANTAGES OF PASTEURIZED MILK.

Your committee is aware that there is a difference of opinion among medical men as to the wholesomeness of pasteurized milk. The advantages and disadvantages have been exhaustively studied by Dr. M. J. Rosenau, Director of the Hygienic Laboratory of the United States Bureau of Public Health and Marine Hospital Service, and in his opinion the advantages so far outweigh the disadvantages that he "unhesitatingly recommends compulsory pasteurization of all milk not certified under class 1 or class 2 of Dr. Melvin's classification."*

Your committee is so strongly impressed with the manifold dangers connected with the milk supply that until the needful reforms in dairy methods are accomplished it recommends to the public the following as immediate safeguards:

1. Do not patronize a milk dealer, at any price, whose milk after standing for two hours reveals a visible sediment at the bottom of the bottle. It is evidence of dirty habits, extremely suggestive of danger, and entirely preventable by clean, decent methods, without greatly increasing the cost.

2. Subject all your milk to home pasteurization by simply bringing it to the boiling point, and after cooling keep the milk on ice. This will destroy germ life and reduce the chances of milk-borne diseases to a minimum.

Dr. H. W. Wiley's committee submitted the following recommendation:

"1.That the milk which is supplied to infants under the age of three years in the District of Columbia should be certified by the Health Office. Milk should contain not more than 5,000 bacteria per cm.; should be not more than 12 hours old, and should be delivered in artificially cooled packages.

"2. That the Health Officer of the District be authorized to advertise for dairies which will be willing to so modify their barns, stables, etc., if necessary, as to secure a license from him for the production of certified milk under the most improved sanitary conditions.

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*The classification referred to is as follows: Class 1, certified milk for infants, as hereinbefore described. Class 2, clean raw milk from healthy cows, as determined by the tuberculin test and veterinary physical examination; the cows to be housed, fed and milked under good conditions, but not necessarily equal to the conditions provided for in class 1; pure water, as determined by chemical and bacteriological examination, to be provided; the bacteriological count of the milk not to exceed 100,000 bacteria per cubic centimeter, at the time the milk reaches the city, at any season of the year, as determined by the Health Department at frequent intervals; milk to be delivered to the customer in sterilized containers to be filled upon the dairy farm, and the temperature of the milk not to exceed 50 degrees F. until delivered to the customer.

"3. That each cow furnishing the milk in the dairy be tested, under the supervision of the Health Officer, for tuberculosis or other contagious or infectious diseases, and that any animal so suffering be excluded from the herd.

"4. That a daily sample or samples drawn from the supply of each certified milk furnished to the city be secured for the purpose of making the bacterial count and determining the chemical composition, etc.

"5. That parents and guardians be urged to use only certified milk, at least for infants' food, in the District of Columbia for all infants under the age of three years.

"6. That if private dairies cannot be induced to furnish certified milk, the Commissioners of the District of Columbia, as a health measure affecting in the highest degree the welfare of the District of Columbia, be asked, if it can be legally done, to establish a municipal dairy for the purpose of furnishing certified milk for the use of infants under three years of age.

"7. That pending the time which must necessarily elapse for the inauguration of a service of certified milk for infants' use, the health officer be authorized, as a result of inspection, to publish a list of dairies from which the milk supply is drawn, giving the average rating of each dairy, the chemical composition and bacterial count of the samples.

"8. That for the purpose of securing modified milk for infants in ill health, according to the prescription of physicians, the Milk Commission of the District Medical Society be requested to secure the establishment of a laboratory, under its supervision, in which only certified milk shall be used and in which, by the use of a separator or otherwise, milk of a definite chemical composition may be prepared from certified milk, in harmony with the physicians' prescriptions relating thereto.

"9. That a complete chemical and bacteriological laboratory be established in connection with the Health Office, of a capacity to examine all the samples necessary to secure the certified and modified milks above described.

"10. That the term 'certified milk,' as used herein, is to be applied to milk secured at dairies subject to a periodic inspection, and the products of which are subjected to constant analysis. The cows providing the milk are properly fed, free of tuberculosis or other contagious diseases, and housed in clean stables properly ventilated, and they are supplied with wholesome water and food and kept clean. The milk is drawn under precautions to avoid infection, is immediately strained and cooled, and packed in sterilized bottles which are kept at a temperature not to exceed 50 degrees F. until delivered to the consumer." * * *

It is fully realized that milk of this character will cost more to produce and should bring a higher price in the market than ordinary uncertified milk. At the same time it is hoped that the producers of milk will endeavor to keep the prices within the means of the ordinary citizen while making a fair profit on their invested capital.

In the language of Professor Harrington, "the public needs proper education that clean milk is a necessity, and that infant sickness and funerals can be reduced at least 40 per cent. * * * A model farm properly manned certainly can not compete on equal terms with a filthy farm, where no attempt is made to conduct the business in a decent manner, especially if customers are indifferent. The dirty producer can even afford to cut prices and take customers away from the other, if customers care to save a cent and make it up in pus and cow dung."

HOME TREATMENT OF NURSERY MILK.*

"The milk as soon as delivered should be placed in a refrigerator upon ice so that the temperature may not exceed 50 degrees F. If desired for infant feeding it should stand for one hour, when the upper third (10 per cent top milk) can be taken off. This top milk is then modified so that the proportion of the constituents may be those of human milk. This is done by mixing seven ounces of the top milk with one ounce or two tablespoonfuls of milk sugar, the same quantity of lime-water and twelve ounces of boiled water. If only ten ounces be required for twenty-four hours' feeding the proportion of each ingredient is reduced one-half; if thirty ounces be necessary add one-half. In case the child presents evidence of feeble digestion, the amount of fats and proteids must be reduced by cutting down the top milk to 6, 5, 4, 3, or even 2 ounces, and sufficient boiled water added to make twenty ounces. After modifying the milk in the manner directed, the correct amount of each feeding is put in a nursing bottle. The necks of the bottles are stopped up with plugs of clean non-absorbent cotton.

"The milk should then be pasteurized. For this purpose different pasteurizers have been placed on the market. A very simple and inexpensive method is to place the bottles in a tin kettle, pour warm water around them and bring the water to a temperature of 180 degrees. The kettle is then covered and removed from the stove, wrapped in a piece of flannel blanket and set upon folded newspapers. At the expiration of half an hour the bottles should be taken out, cooled and kept on ice until used. When it is time to feed the baby, one of the bottles is removed and set in hot water until the temperature of the milk is 98 degrees. A higher or lower temperature is absolutely injurious to the infant."

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*This information is obtained largely from Prof. Henry D. Fry's Monograph on "Maternity," Washington, 1907, a work which can be confidently recommended.

Quantity of Food for Each Feeding.

The number of feedings in 24 hours has been given on page 96. Doctor Fry believes that a frequent cause of failure to raise babies on modified milk is that they are overfed. He considers one to two tablespoonfuls sufficient for each feeding during the first few weeks of life. "At one month of age give two to three tablespoonfuls; at six weeks three to four tablespoonfuls; at two months four to five tablespoonfuls. Increase the quantity at the rate of one ounce each month up to six months of age. Two tablespoonfuls make an ounce. Another trouble is the baby gets the food into its stomach too fast. When nursing at the breast the baby requires from fifteen to twenty minutes to suck the nourishment. When fed with the bottle it often obtains its food in five minutes."

In this connection it should be remembered that no substitute for human milk as yet prepared can take the place of a sound mother's milk, and that as long as we are compelled to resort to infant feeding we should feel our way gradually, bearing in mind Biedert's conclusions, that a bottle-fed infant thrives best when the minimum amount of food necessary for development is given. If in the course of feeding symptoms of diarrhea, with green stools, appear, it is best to stop the milk altogether and feed the baby with albumen water, barley water or rice water and consult a physician at once.

Barley water is made as follows: Take two tablespoonfuls of pearl barley, add one quart of water, boil for three hours, add enough water to keep the quantity to one quart, strain through coarse muslin. Keep well covered in refrigerator, warm to 98 degrees before using it. Rice water is made in the same manner.

Care of the Nursery Refrigerator, Nursing Bottles, Nipples, Utensils, Etc.

It is absolutely essential that intelligent and careful attention should be paid at home to the cleanliness of bottles, nipples, dippers, cooking utensils, etc. The nursery refrigerator must be metal lined and kept clean, aired free from odors and well supplied with ice (unless the place in which it is kept has a temperature less than 50 degrees).

"The bottles can be cleaned as follows: Rinse with the brush in cold water in which a little washing soda is dissolved, then wash and brush thoroughly with soap and hot water and rinse again in sterile water.

Or the bottles as soon as emptied can be filled with cold water to which a little bicarbonate of soda is added. Before being refilled they should be thoroughly washed with a brush and hot soap suds and then boiled for twenty minutes. * * * Never let a nursery bottle stay dirty after use until the milk dries in it. The neck of the bottle should be large enough to permit easy cleaning and it should have no corners or angles on the inside. The nipples should be of rubber and made so that they can be easily turned inside out for cleaning. New nipples should always be boiled before use. Immediately after use the nipples should be washed in soda water and kept in a solution of boric acid and when wanted again they should be rinsed in water." Attention to these details should not be neglected, as the life of the infant depends upon absolute cleanliness of the food at all times, and especially during the warm months.

From what has been said on this subject it is evident—

1. That no effort should be spared to secure the enactment of more stringent laws regulating the production and sale of pure milk and cream.

2. The establishment of day nurseries, where the infants of those who are obliged to go out to their work may be properly cared for, is urgently called for.

3. The establishment of dispensaries, where intelligent instructions are given in infant feeding, and modified milk sold at reasonable rates, would be in the interest of public health and humanity.

It is gratifying to note that such a Dispensary was started April 13, 1908, in connection with the Neighborhood House in Southwest Washington. According to Dr. Wm. J. French, up to October 1, 1908, 261 infants and children have been treated. There were but 3 deaths. The Records of the Health Office show that during 1907 there were 50 deaths in Southwest Washington in children under 10 years of age, while during the year 1908 there were but 29 deaths in children of the same age period, in spite of the very hot summer. Dr. French very justly considers the clean, pure milk, and the instructions furnished by the Dispensary factors in this marked reduction of mortality rates.

THE PREVENTION OF PERMANENT DISABILITIES IN CHILDHOOD.

The writer, in his sociological studies of physically defective persons who contribute such a large contingent to our charitable institutions, has felt convinced that many of these partial and complete disabilities could have been prevented by proper care and treatment in childhood. It is now well known that many of the joint deformities in children are amenable to treatment and that a ruptured child or person may be radically cured. As a member of the Board of Charities he recommended that the physicians to the poor and agents of the Associated Charities be requested to encourage the parents of such children to authorize operative procedures or hospital treatment, for the prevention of permanent disabilities. The result, within the past year, more than justifies a general acceptance of these principles. The records of the Children's Hospital reveal the gratifying fact that the operations for the radical cure of hernia, for example, have increased from 9 in 1907 to 25 in 1908, and that every child was discharged as cured. The increase in the number of joint cases and deformities treated is also very marked.

In order to determine the number of physically defective children in our graded public schools the Health Officer and the Board of Education authorized a general medical survey of the pupils. The examination was conducted by the Medical Inspectors of the Schools under the general direction of Dr. Henry C. Macatee, Assistant Secretary of the President's Homes Commission. The results have been tabulated by him and will be found in Table A.

From this table we learn that, out of 43,005 pupils in the graded schools, 13,407 were colored and 29,598 were white. Among the colored children 3,784 instances of the defects listed in the table were encountered, or a relation of 28.2%; among the white pupils 11,520 notations of defects, a relation of 38.9% to the whole were encountered. The difference in percentage of defects between white and colored children is solely due to better condition of the teeth in the colored children. Total defects noted, 15,304, or 35.5% of the pupils examined. These percentages, high as they may appear, are very much lower than the rates reported from New York.

Omitting from this consideration the 6,698 pupils who probably needed only dental care—a matter of importance, however, to the general health—we still have to deal with 8,606 pupils, or 20% of the total, whose physical condition should be a matter of grave concern to the parents. Of this number 149 were crippled, 272 deformed, 461 had strabismus (squint), 312 had discharging ears, 835 defective hearing, 2,176 defective vision, 2,062 were "mouth breathers," 703 were undersized, 727 ill nourished and 934 were anemic.

It was not deemed best to conduct physical examinations involving the removal of clothing and hence the number of ruptured children could not be determined, but, judging from the reports of the agents of the Associated Charities, the number is sufficiently great for serious consideration.

It will be readily conceded that every crippled or deformed child should, if possible, be spared from permanent disability, and no thoughtful parent should hesitate to act when attention is directed to the serious consequences of neglect. Poverty is no excuse for the "do nothing system," as the medical charities offer adequate facilities for treatment of persons unable to pay for the same.

Nor is there an excuse for not attempting to cure discharging ears, defective hearing or vision, since every observer is familiar with the sad consequences of such defects in the ultimate struggle for existence. Parents may not know that a child afflicted with a squint, harelip or cleft palate may be transformed into a vicious character, because it is the object of constant ridicule within and without school; and that all of this could be avoided by a timely operation. Parents are probably not aware that many of the nervous affections and even mental defects in boys are due to some slight malformation of the genital organs, for which the Hebrews instituted circumcision. Nor is it generally known that anemic and ill nourished children and those suffering from enlarged tonsils, cervical glands, or post-nasal growths, and the majority of "mouth breathers" are peculiarly susceptible to disease in general and to tuberculosis in particular.

Lastly, there is no good reason why special attention should not be given to the physical development of undersized children or those affected with slight muscular deformities, which, if left uncorrected, will be a source of regret and even reproach to the teacher and parent.

The remedy lies chiefly in education, and for this purpose the study of hygiene should be made an important part of the school curriculum. In this way the parents may be reached through the child. Instructive visiting nurses should be appointed for the schools so that they may follow the child to the home and point out to the parents the desirability of securing prompt professional advice in all cases where it is indicated, and especially in instances where neglect is likely to result in permanent disability. In this general educational campaign the Medical Inspectors of Schools, teachers, social settlement workers, agents and friendly visitors of the Associated Charities can render a distinct service to the child and the State.

INQUIRY FOR THE PRESIDENT'S HOMES COMMISSION MEDICAL INSPECTION OF PUBLIC SCHOOL CHILDREN, WASHINGTON, D. C.

SCHOOL.	Anemic.	Crippled.	Deformed.	Ill-nourished.	Mouth breather.	Strabismus.	Undersized.	Defective Vision.	Defective Hearing.	Discharging Ears.	Subject to Toothache in Past Year.	Total times defects noted.	Total enrollment.
Corcoran	39		2	17	31	9	10	39	3	2	86	226	412
Weightman	29			8	12	1	5	22	6	1	53	139	375
Industrial Home Sch	11		3	1	6	3	1	13	3		27	68	134
Reservoir	13				6	2	1	6	2		23	53	127
Conduit	2										12	14	24
Tenley	28	3	1	6	15	5	8	16	4		73	159	273
Curtis	24	1	5	6	19	5	7	28	13	2	76	187	369
Addison	11	2	1	4	18	5	3	10	5	1	56	116	319
Hyde	9		1	1	14	1	6	13	1	5	20	67	341
Fillmore	14		1	1	19	3	4	2	1		72	117	272
Jackson	9	2	2	1	20	3	4	7	3		104	155	313
Hamilton	5			7	1	1	1	6	1		5	27	114
Benning	3			2	3		1	9			5	23	127
Edmonds	8	2		1	17	2	2	25	13	6	78	154	377
Taylor	9	1			6	2	4	46	19	10	105	202	323
Maury	7	2	1		5		8	20	7	1	19	70	369
Madison	11				5		1	21	7	3	65	113	312
Blair	13			2	4	3	2	8	9	1	3	45	329
Blow	2	1		10	7		4	15	9	3	18	69	206
Webb	16	4		5	7	2	2	13	8	2	9	68	383
Ludlow	4	1		2	6	3	1	14	5	11	109	156	305
Pierce	7		1	2	4	2	4	14	2	2	83	121	367
Kenilworth					2	1		10	5		13	31	101
Wheatley	10		1	2	4	2	2	15	10	14	62	122	359
Eckington	3	2		1	14	3	9	17	6		36	91	340
Brookland		1	3		18		13	12	2		71	120	414
Langdon		1		1	16	1	7	10	4	1	41	82	275
Emery	1	3	1	2	43	2	13	27	4		95	191	621
Abbot	3	3	2	4	23		12	41	12	4	69	173	399
Twining	3	2	1	2	15	2	16	18	16	1	25	101	312
Gage	3				43	2	13	20	3		40	124	468
Henry	1	2		3	37			13	3		14	73	501
Polk				1	20		1	36	11	3	42	114	413
Morse	1	1	1		21	5	16	33	8	2	42	130	334
Seaton 1	2			6	27	2	20	26	17	3	62	166	407
Hayes	2		1	1	21	2	11	14	4		52	108	299
Stanton		1			15			2	1		18	37	142
Van Ness, J. P.		3		1	33	5		12	6	3	72	135	318
Ketcham	1				45	4		24	9	6	80	169	301
VanBuren	2				16	1		23	1	1	41	85	76
VanBuren Annex		3			32			20	12	2	87	156	326
Bradley	4	4			48	5		25	16	6	143	251	370
Potomac	1				25	2		8	6	4	47	93	138
Smallwood	8	2	1	4	31	5		27	7	3	104	192	400
Amidon	3		2	1	31			30	19	7	98	191	405
Jefferson	23	2	1		56	3	1	56	22	15	166	345	810
Bowen, S. J.	5	3	1	3	40	7	1	47	26	11	102	246	352
Greenleaf	19	1	2	3	36	6		25	7	5	103	207	391
Congress Heights	1				38	3		37	9	6	104	198	347
Cranch	18	7	4	8	39	19	7	37	19	8	110	276	602
Tyler	11	3	1	1	13	5	3	17	8	7	68	137	386
Buchanan	8	4	1	9	22	7	2	12	12	14	91	182	414
Orr	8	1		4	18	1	5	8	5	2	33	85	202
Lenox	14	3	1	6	29	5	4	29	18	6	130	245	376
Dent	16	2	1	8	39	6	3	30	9	5	154	273	380
Brent	10	2	1	3	21	6	6	40	28	8	30	156	319
Wallach	18	1		6	54	11	10	44	19	1	72	236	591

SCHOOL.	Anemic.	Crippled.	Deformed.	Ill-nourished.	Mouth breather.	Strabismus.	Undersized.	Defective Vision.	Defective Hearing.	Discharging Ears.	Subject to Toothache in Past Year.	Total times defects noted.	Total enrollment.
Towers	19	2		4	35	9	11	31	16	27	190	364	424
Peabody	26	2	2	5	40	10	13	37	20	6	144	304	588
Hilton	18	1	1	5	18	7	13	25	8	1	81	178	376
Carberry	17		1	10	56	2	10	14	4	10	96	220	335
Thomsen		1			3				5	2	6	17	306
Force	4	2		1	21	4	3	17	15		3	70	603
Webster	3	1	3	2	25	2	4	28	12	1	10	91	554
Grant	2	3		3	40	4	6	7	4	1	53	93	456
Gales	1			4	31	1	1	18	13	3	57	138	425
Arthur	5	1		5	35	4	6	5	5		64	130	345
Toner	3	1	1	6	24	6	3	3	4	1	50	105	296
Blake	2		1		18	3	7	4	1		52	88	294
Hubbard	4	1			30	1	1	6	2		66	111	363
Petworth	8			3	30		2	8	4	1	88	144	347
Brightwood Pk.					14	1	1	4	1	3	19	43	107
Takoma*	4				18	1	1	2	2		49	77	273
Morgan, T. P.	1		1		3	1		5	2		107	120	459
Harrison	2		2	1	13	2	2	2	2	1	78	105	304
Dennison	3	1	1		6	2	1	8	5		72	99	424
Adams	2			1	11		1	2	2	2	67	88	330
Woodburn	1			1	3			3	3		18	29	108
Phelps 1	7			3	18	4	3	6	2	1	90	135	349
Brentwood	8			3	14		1	3	3		42	74	194
Monroe	13	1	1	1	37	2	2	7	5	1	97	167	359
Johnson	4				39	3	2	4	6		135	193	525
Ross	10				44	2	2	14	5		112	189	478
Franklin	12			1	12	4	6	28	14	1	25	103	357
625 Q st. Atypical		1	1	1	12		2	3		1		21	35
Chevy Chase		2			19	1	1	1	2		33	59	244
Berret	2	2			18		5	4	4		52	89	249
12th st., Kgt.	1	1		1	1		1	1				6	31
Miscellaneous. Total 2	655	99	59	217	1898	251	375	1492	656	261	5574	11,520	29,598
COLORED.													
Magruder	5	10	1	3	4	2	5	19	7	1	18	75	286
Slater	29	1	14	4	3	7	17	26	6	4	24	137	360
Langston	10	1	2	14	7	8	19	16	5		18	100	252
Douglass	10	1	13	24	5	32	8	20	7	2	50	172	374
Lovejoy	13		7	33	5	41	22	27	5	1	57	211	458
Ivy City			8	12	1	4	4	6	1	3	43	82	123
Ab. Simmons	1		29	29	9	14	12	15	3		78	190	317
Jones	4		12	13	2	7	8	18			2	66	276
Logan	1		10	9	6	17	19	27	2		20	111	365
Deanwood			3	5		2	4	8			15	37	230
Benning Road		1	1	1			1	1			7	12	106
Payne		3	16	26	3	10	26	14	2		41	141	322
Wilson, Hy.		2	5	9	2	4	1	10			8	41	358
Chain Bridge				1	2	1		4					31
Reno		1			5			9	3		29	47	145
Sumner		1			3	2	2	10	3		12	33	192
Miner		3		1	5	1	3	11	4		5	33	358
Montgomery	5		2	29	3	4	5	17	1		6	72	334
Briggs	6	1	2	5	14	9	2	22	6	1	17	85	394
Stevens	8	3	9	17	5	12	5	50	4	2	43	158	800
Phillips	1		7	13	6	6	7	17	6		11	74	337
Wormley	3		3	11	2	4	6	9	2		12	52	358
A. Lincoln	12		5	15	6		12	48	16		76	190	360
Bell	10		7	6	8	1	14	39	12	11	73	181	367
Giddings	10	2	1	7	2		20	14	4	1	56	117	347
Randall	9	2	8	11	1		14	26	1	2	54	128	463
A. Bowen	9	1	6	3	4	2	10	18	5	5	55	118	297
Birney	7	3	7	8	9	1	13	49	16	2	61	176	470
Ambush	12			10	3		21	33	14	6	75	174	320

*Takoma 1st grade not included.

SCHOOL.	Anemic	Crippled.	Deformed.	Ill-nourished.	Mouth breather.	Strabismus.	Undersized.	Defective Vision.	Defective Hearing.	Discharging Ears.	Subject to Toothache in Past Year.	Total times defects noted.	Total enrollment.
Cardoza	8		5	14	3	3	10	29	11	2	60	145	404
Syphax	21		7	15	9	2	15	8	12	2	67	158	343
Garnet	13	2	3	14	7	4	5	13	4	2	3	70	594
Mott	10	2	3	25	4	3	3	8	2	1	6	67	523
Banneker	12		2	19	6			8	4	1	9	61	385
Cook	9	3	4	23	2	1	2	9	3		2	58	369
Bruce	5	1	2	17	2	1	2	1	1		2	34	222
Garrison	10	2	1	9	2		2	5	2		5	38	423
Patterson	19	1	2	34	1	4	6	12		1	3	83	497
Military Road......	2	1	1	6				3			1	14	96
Ft. Slocum	1		1				1	1	1			5	51
Orphans' Home ..	1	1	1	3	1	1	2	3	4	1		18	73
Garnet Atyp........	1	1	2	1	1							6	13
St. Luke Atyp. ...	2		1	1	1			1				6	14
Total	279	50	213	510	164	210	328	684	179	51	1124	3784	13,407
Miscellaneous. Total White .. 2	655	99	59	217	1898	251	375	1492	656	261	5574	11,520	29,598
Grand Total .. 2	934	149	272	727	2062	461	703	2176	835	312	6698	15,304	43,005
Per cent relation to total examined ..													
White	2.21	0.33	0.19	0.73	6.41	0.84	1.26	5.04	2.21	0.88	18.83		
Colored	2.08	0.37	1.58	3.80	1.22	1.56	2.44	5.10	1.33	0.38	8.38		
All	2.17	0.34	0.63	1.69	4.79	1.07	1.63	5.05	1.94	0.72	15.57		

Times per cent defects exclusive of toothache occurred in—

White	20.08%
Colored	19.84%
All	20.01%

Times per cent all defects occurred in—

White	38.92%
Colored	28.22%
All	35.58%

THE HEALTH OF THE CITY OF WASHINGTON.

In speaking of the health of a given locality it has always been deemed necessary that the climatic and telluric conditions should be considered. For the purpose of a comparative study I requested Prof. Willis L. Moore and Prof. A. J. Henry, of the United States Weather Bureau, to furnish me with meteorological data covering a period of thirty years for the city of Washington and six other cities where the climatic conditions are quite similar to those which obtain in this city. A careful analysis of these data and a study of the comparative mortality statistics justify the conclusion that there is absolutely nothing inimical to health in the climate of Washington. It was found, however, that although the city enjoys practically the same climate as Cincinnati, Indianapolis, Detroit, Philadelphia, Springfield and Kansas City, it has the highest death-rate* —22.8 per 1,000, Philadelphia coming next with a rate of 21.2 per mille, while Detroit, Kansas City, Indianapolis and Springfield have an average of 17.5 per 1,000.†

As a matter of record, Dr. Busey, in one of his addresses, quotes the "Washington Gazette" of 1797, that "during that year, in a population of two thousand, but seven deaths occurred in this city." If, then, during succeeding decades, "fatal epidemics of bilious fever, intermittent bilious fever and bilious dysentery" and typhoid fever occurred, and the reputation of the National Capital as regards health conditions has suffered, it cannot be the effect of climate, but of something added to the climate, and students of the subject have long since recognized that, apart from temperature, humidity, atmospheric pressure, winds, sunshine and other meterological conditions, there are many factors—such as soil, water, impure air, the presence of insects, social and racial problems —which play an important role in the healthfulness of a given locality.

It can be safely asserted that a number of causes have operated in the production of unsanitary factors in the National Capital.

The topography of the basin in which the city is located was undulating, interspersed with small valleys, ravines, morasses and lowlands subject to periodical overflows. The lowlands, according to Dr. Busey, "spread south of the F street ridge to the river shore, including a greater part of the White Lot and the Mall, and in the section known as 'the slashes,' lying along the northern boundary from the Tiber to Rock Creek, and dipping in many places far into the interior of the basin. When the city was first platted there were no Potomac and Anacostia river flats; the formation of the Potomac marshes is attributed to the construction of the Anacostia causeway in 1805 and the building of the Long bridge in 1808, and the Anacostia river flats to the construction of the Kentucky avenue bridge in 1795 and the Bennings bridge in 1797." Whatever their cause may have been, they increased from year to year by continuous depositions and soon became notorious breeding grounds for mosquitoes and the chief source for the propagation of malaria. The Potomac flats have been reclaimed since 1882, adding about 621 acres to our parking system, but the Anacostia river flats, which cover an area of over 1,000 acres, the title to which is vested in the United States, still continue to be a menace to the health of our inhabitants. The reclamation of the Potomac flats has greatly reduced the prevalence of malaria, as shown by the statistics of the health department, and it is reasonably and scientifically correct to maintain that similar results would follow the reclamation of the Anacostia flats. Take away the mosquito breeding places of every description and there will be no extra-corporal habitat for the germs of malaria. It is a deplorable fact that, although this measure has been urged by the Commissioners since 1894, no legislative action has yet been taken.

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*Of these seven cities Washington had the highest death rates from malarial, diarrheal diseases, typhoid and consumption (Philadelphia exceeding in pneumonia).

†Considerably less than the general death-rate in the registration area in the United States, representing 10,000,000 inhabitants. For the census year 1900 this was 18.6 per 1,000.

Relations of Water Supply and Sewers to Health.

Prior to the introduction of Potomac water in 1859 the inhabitants had to depend upon springs, pumps, wells and cisterns subject to pollution from the sewage of cesspools, vaults and box privies. It was the old story of wells and privies being dangerous neighbors and failure to recognize the necessity that a system of public sewerage must go hand in hand with the public water supply, the neglect of which compels recourse to various makeshifts and must inevitably lead to pollution of soil, water and air. There can be no question that these factors have played an important role in the causation and spread of typhoid fever, dysentery, diarrhea and other intestinal infections and have served to swell the general mortality rates. Many of these conditions have been improved, a comprehensive system of sewerage disposal has been adopted within the city limits, and the number of public pumps has been reduced from 171 in 1895 to 42 in 1908. The number of private wells, however, is a matter of conjecture.

It may be urged that with the introduction of a purer water supply in 1859, health conditions, especially as regards the so-called water-borne diseases, should have improved, but it is a long and tedious matter to convince the average man that a clear, sparkling and very palatable pump-water in cities may be, and very frequently is, liable to the grossest forms of pollution. He knows from observation that hydrant water is at times absolutely filthy from suspended matter, and that it reaches in summer a temperature which is far from palatable. But he does not know that the well water in its passage may have simply been deprived of the suspended matter, without losing some of the most dangerous forms of disease germs. It involves, therefore, many years of education to impress the public with the dangers of pumps, and, by the time this was fairly well accomplished (although many even now are still in doubt) the Potomac river, by reason of an ever-increasing population in the towns, villages and settlements located along the banks and within its watershed, had become itself a dangerous source of infection.

My suspicions that typhoid fever germs might travel all the way from Cumberland, a distance of 134 miles, and infect the consumers of Potomac water in Washington, were confirmed as early as the winter of 1889-1890 by studying the effects of the typhoid fever epidemic at Cumberland upon the prevalence of the disease in Washington. The records of the health office show that during this epidemic, from December, 1889, to April, 1890, the deaths from typhoid fever amounted to 74, as compared with 42 for the corresponding months of the previous year. Indeed, we had almost double the number of typhoid deaths during these months than for any corresponding months either before or since this epidemic. Cumberland had about 45 deaths and 485 cases. Washington had 74 deaths and about 800 cases, and yet the starting point of all was the excreta of one patient washed into a little run which empties into the Potomac river 300 feet above the pumping station of the water supply for Cumberland. In the face of this fact and the almost constant presence of intestinal bacteria in Potomac water, the writer had no hesitation in declaring that the excessive typhoid fever rate of the National Capital was largely due to contaminated Potomac water, and urged, with other members of the profession, the speedy purification by means of sand filtration as well as the prevention of river pollution.

FILTRATION OF THE POTOMAC WATER.

In 1901 and subsequent thereto Congress appropriated sufficient money for a complete system of slow or natural sand filters. This filtration plant was completed under the supervision of United States engineer officers, with Allen Hazen as consulting engineer, in the fall of 1905. It covers twenty-nine acres and is the largest in America, and in many respects the most modern and scientific in the world. It handles about 75,000,000 gallons a day and eliminates ninety-eight to ninety-nine per cent of all the bacteria; and we have at least the comforting assurance that a corresponding percentage of disease-producing germs will also be removed. The effects of filtration upon the typhoid fever rates are shown by the fact that the rate reached as high as 104 in 1890, and was still 60.3 during the five-year period 1896-1900, but has fallen in 1907 to 34.6 per 100,000. As a result of the installation of filtration plants elsewhere, not only a reduction of eighty-one per cent in the deaths from typhoid fever has been noted, but also a marked reduction in the general death rate. Computations by Hazen clearly indicate that where one death from typhoid fever has been avoided by the use of a better water, a certain number of deaths, probably two or three, from other causes, have been avoided.

It is a difficult matter to explain how water is connected with the deaths other than those from water-borne diseases, yet when we consider that water enters into the composition of the body to the extent of about sixty per cent, we are in a position to appreciate the sanitary acumen of Aristotle when he wrote in his Politica: "The greatest influence upon health is exerted upon those things which we most freely and frequently require for our existence, and this is especially true of water and air."

Influence of Sewers Upon the Health of the Community.

According to D. C. McComb, superintendent of sewers, "the first action materially affecting the drainage of the city was the construction of the Washington canal from the Potomac river at the foot of Seventeenth street west, to the Anacostia river at the foot of Second street east. The sewers constructed by the city prior to 1871 emptied into the canal. * * * After the introduction of the Potomac water supply in the year 1859 the demand for and the construction of sewers increased, and it was not long before complaints were made of the nuisance caused by the foul materials brought by these sewers to the canal. * * * It was not until the act of the legislative assembly of August 21, 1871, that the discharge of solids into sewers was permitted, although in point of fact water closets with direct sewer connections were in use for many years prior to the passage of this act."

As a result of these conditions, the Board of Health, in 1871, found not only over 30,000 privy boxes, "many in bad condition and overflowing," the contents of which were emptied, according to Dr. Tindall, upon the commons of South Washington, within less than one mile from the best residence and business section of the city, but also that the Washington canal, which L'Enfant had hoped to preserve as a natural waterway, had become, in the language of Prof. Henry, of the Smithsonian Institution, "an open cesspool, a fruitful source of discomfort and disease, receiving the sewage direct in its midst, and inconsistent with the intelligence of the age." This great nuisance, passing within a few hundred yards of the White House, the War, Navy and State departments, through the Agricultural, Smithsonian and Botanical gardens, almost to the very gates of the Capitol, was abated in 1871-1880, upon the demands of the Board of Health.

It is safe to say that the District prior to 1871 spent less than $100,000 for sewers. We now have 103.2 miles of main sewers and 365.2 miles of pipe sewers, constructed at a total cost of $13,613,932.38. Provisions have never been adequate, however, and the records of the Health Department show that even now in about 4,100 houses sewer connections cannot be made, because of the absence of branch sewers.

A summary of the evidence reveals the significant fact that the cities, both at home and abroad, in which there has been the most marked decrease in typhoid fever are those in which a pure water supply has been substituted for a pre-existing contaminated one, and the effects are still more marked when combined with a good sewerage system.

The history of every sewered town shows a lessening of the typhoid death rate subsequent to the construction of the sewers, and that the typhoid rate is always higher in sections supplied with makeshifts. In 1895 the writer pointed out that typhoid prevailed in the city of Washington in one of 81 houses with privies, and in only one in 149 of those connected with sewers. The health officer of Nottingham, England, has since then presented similar evidence. The only reasonable explanation for this is that sewers carry away the filth that otherwise would contaminate the soil and ground water, but even if there were no wells these makeshifts are still a source of danger in so far as they favor the transmission of the infection by means of flies, nor can the possibility be ignored that the germs in leaky or overflowing boxes may reach the upper layer of the soil and, with pulverized dust, gain access to the system.

HAS HUMAN LIFE BEEN PROLONGED BY EFFORTS IN SANITATION?

Professor Finkelnburg, of Bonn, estimates that the average length of human life in the 16th century was only between 18 and 20 years, and at the close of the 18th century it was a little over 30 years, while today it is between 38 and 40 years; indeed, the span of life since 1880 has been lengthened about six years. No two factors have contributed so much to the general result as the improvement of the air we breathe and the water we drink. Indeed, we have ample evidence that, with the introduction of public water supplies and sewers, the general mortality in numerous cities during the past fifty years has been reduced fully one-half, the good effects being especially shown by a marked decrease in the number of cases of typhoid fever, diarrheal diseases and consumption. The vital statistics of Great Britain furnish the proof,* and our experience with American cities confirms this conclusion.

The death rate in London has been decreased from 40 per 1,000 in 1780 to 15.1 per 1,000 in 1905; in Berlin from 32.9 in 1875 to 16.4 in 1904; in Munich from 41.6 in 1871 to 18 in 1906; in Washington from 28.08 in 1875 to 19.25 in 1907, and in New York from 38 per 1,000 in 1854 to 18.9 in 1906. The general mortality in the United States has been reduced from 19.6 in 1890 to 16.2 per 1,000 in 1905, which means a saving of over 290,000 lives in one year alone.

To demonstrate the beneficent effects of sanitary reforms, the following comparative illustration, which I gathered from one of the public addresses of my deceased friend, Dr. Busey, and have brought up to date, may be cited:

In 1872 the cities of Berlin and Washington were alike in primitive municipal methods of sanitation. Without adequate distribution of the water supply, the larger part of their population was dependent upon public and private wells. Without systems of sewerage both were alike supplied with makeshifts for the disposal of human excreta and waste waters. The unpaved streets were the common receptacle of garbage, ashes and house sweepings, and along the gutters the surface and house drainage were conducted to the neighboring water courses. Since the city of Berlin began the system of sanitary improvements, completed in 1890, at a cost of fifty-nine million marks, for a pure and ample water supply, and forty-two and one-half million for construction of sewers, the typhoid fever death rate has fallen from 143 in 1872 to 5 in 1896,

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*The following table shows the death rate from certain diseases per 10,000 of population in English cities before and after the introduction of sanitary works (see Cameron, "A Manual of Hygiene," 1874, p. 129):

	Typhoid Fever.	Diarrhea.	Consumption.
Bristol, before sanitary works	10.0	10.5	31.0
Bristol, after sanitary works	6.5	9.1	25.5
Leicester, before sanitary works	14.7	16.0	43.3
Leicester, after sanitary works	7.7	19.3	29.3
Cardiff, before sanitary works	17.5	17.2	34.7
Cardiff, after sanitary works	10.5	4.5	28.6
Macclesfield, before sanitary works	14.2	11.0	51.5
Macclesfield, after sanitary works	8.5	9.0	35.3
Warwick, before sanitary works	19.0	5.7	40.0
Warwick, after sanitary works	9.0	8.0	32.3
Stratford, before sanitary works	12.5	11.2	26.6
Stratford, after sanitary works	4.0	5.7	26.5
Ashby, before sanitary works	13.3	4.0	25.5
Ashby, after sanitary works	5.7	8.3	31.3
Dover, before sanitary works	14.0	9.5	26.5
Dover, after sanitary works	9.0	7.0	21.2
Croydon, before sanitary works	15.0	10.0	....
Croydon, after sanitary works	5.5	7.0	....

per 100,000 of its inhabitants; and the general death rate from 32.9 in 1875 per 1,000 to 16.4 per 1,000 in 1904, while our death rate from typhoid fever is still seven times greater than that of Berlin, our general death rate has been reduced from 28.08 in 1875 to 19.25 in 1907—results not so much due to climatic differences, but largely due to the fact that the German capital enjoyed superior advantages in sanitation and the housing problem, while we are still in the process of evolution, and are making slower progress on account of the mixed character of our population.

The writer, however, is not a pessimist as regards the health of this city, since a retrospect conclusively shows that the efforts of Senator Gallinger and other members of Congress, the Commissioners and the Health Department in the sanitation of the National Capital have been most fruitful and beneficent.

Decrease in Death Rates Since 1875.

When we recall the fact that, in 1875, the death rate for the white population was still 21.04 per 1,000, while in 1907 it was only 15.54, and that likewise a steady and most gratifying decrease from 42.86 to 28.21 per 1,000 of the colored population has taken place, we have reason to look hopefully to the future.

In discussing the healthfulness of the National Capital, it would not be just to the fair name of our city did we fail to emphasize the fact that the colored element is a potent factor in maintaining a high general death rate. For example, the mortality rate during the census year of 1900 in the larger cities of the Registration area in the United States, representing 10,000,000 of inhabitants, surrounded by modern influences of civilization, was 18.6 per 1,000; our own rate for the white population was 17.81, and for the colored 30.43, making a general high average of 21.74. Our population is composed of 231,417 whites and 95,018 colored, which means that Washington includes the largest colored city in the world.

Causes of Large Death Rates Among the Colored Race.

An analysis of the relative incidence of the most fatal diseases on the white and colored race shows that the excessive mortality is especially marked in Pneumonia (ratio 1 to 3.30), Tuberculosis of the lungs (1 to 3), Abdominal Tuberculosis (1 to 4.10), Pulmonary Hemorrhage (1 to 6.13), Diarrhea and Enteritis under two years of age (1 to 2.96) and Typhoid Fever (1 to 1.79), and is higher in all other diseases, even in malarial affections (1 to 4.32), from which they were supposed to enjoy comparative immunity—the only exception being Alcoholism, Delirium Tremens and Cirrhosis of the Liver, in which the ratio is less than among the whites.

It is not an easy matter to account for this excessive mortality. In the first place, we can not say that transferring the African race to a temperate climate has improved its physical condition. Negroes in this and other temperate climates are extremely liable to tuberculosis and kindred affections. This must be attributed not only to climatic conditions, but also to the radical changes of living both as regards habitation and food. The changes from the native shelter, with its natural ventilation, to the schoolroom and house, the abrupt change from native and simple food to the more refined flours and sugars, doubtless produce in the negro, as in the Indian, a vulnerability of the respiratory and gastric tract to the invasion of the tubercle bacillus and lessens his general power of resistance. All of the bad effects are accentuated when one race mingles with another, and, as a result, a tendency to degeneration manifests itself. Racial degeneracy has been defined as non-resistance to the influences inimical to the existence of the race. The individual, therefore, who cannot resist the disease-producing causes which are about him, whether they be germs, climate, or whatever their nature, is physically degenerate. We see this especially manifested in the half-breed Indian and in the mulatto, neither of whom is scarcely ever as robust as either of the races from whence he came. The transplantation of the Negro from his native soil, both in Africa and in the South, to less favorable environments as regards food and housing conditions, was not conducive to his physical welfare. The housing of the colored population has always been a disgrace to the National Capital, and even now our alley houses and slums constitute the main shelter for nearly 20,000 of this class of population.

The rapid influx of a negro population during the Civil War, estimated to have been between 30,000 and 40,000, imperatively demanded immediate accommodation. In consequence of this necessity hovels of every description arose, much of the material having been obtained from the abandoned army camps and hospitals.

In the report of the Board of Health for 1877, page 46, we read: "No meaner cabins for temporary or permanent shelter can be found than some our wretched poor are born and exist and die in here at the Capital of the United States. And, strange as it may seem, none so mean that they have not an owner mean enough to charge rent for them. Down in the alleys below grade, with combination roof of tar, felt, shingles, rags, tin, gravel, boards and holes, floors damp and broken, walls begrimed by smoke and age, so domiciled are families with all the dignity of tenants having rent to pay." This description, given thirty-one years ago, fits many of the habitations in this city today, and the influence of such homes upon death rates is shown by the fact that in 1906 the death rate among alley residents was 26.96 as compared with 18.75 among the residents of streets.

It is known that 90.54 per cent of our alley population are colored. It is not surprising, therefore, that during the past 12 years they have contributed 5,268 out of the 9,534 deaths from consumption.

Infantile diarrhea, for reasons given,* is also more prevalent in insanitary dwellings.

Here, again, the colored population, obliged as they are to find shelter in houses unfit for human habitation, contributed in the last six years 1,202 out of the 2,003 deaths from diarrhea and enteritis under two years of age. The mortality of children under one year of age is 115.50 per 1,000 among the white, and 334.86 among the colored. The white infantile death rate of 115.50 per 1,000 is lower than that of any of the 106 American cities, and also lower than that of 42 German cities tabulated by Professor Harrington, while the rate for colored infants is appalling.

It is likewise a noteworthy fact that, out of the 1,672 deaths from typhoid fever during the last ten years, 698 were colored and 974 white. The rate per 100,000 of population was 47.4 for the whites and 76.4 for the colored. Both rates are excessive, to be sure, but the factor of environment and other predisposing causes is plainly revealed by the undue fatality in the colored population.

Sufficient reference has been made to the influence of insanitary homes, but the mortality rate is especially excessive when combined with overcrowding. Hand in hand, and not infrequently as a result of such conditions, we also observe a greater amount of abject want, of filth, of crime, licentiousness and other excesses which predispose to disease and even affect the unborn offspring.

I am not disposed to attribute all this and the general excessive mortality rate in the colored race to racial degeneracy, because many of the factors are sociological and to be found among the poor and ignorant everywhere. The colored element in Washington represents to a large extent those engaged in laborious work, probably the most exposed to hardship and inclement weather. Some allowance must be made for this in computation of the comparative death rates. The broad fact remains, however, that the average mortality rate in the seven cities which I selected, on account of similarity of climate, is 18.01 in the white population, and 27.12 for the colored element, and we may conclude that, while uplifting influences and higher standards of living are necessary among the least resourceful classes, regardless of race, they are especially imperative for the Afro-American. That his physical welfare responds promptly to improved environment is strikingly illustrated by a decrease in his general death rate from 42.86 in 1875 to 28.21 per 1,000 in 1907, and in the rate from consumption from 6.9 in 1878 to 4.5 in 1907.

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*Kober's "Industrial Hygiene," p. 99.

REGENERATION OF HOUSING CONDITIONS.

The regeneration of the housing conditions and removal of slums does not concern a few well-meaning citizens alone, for the germs of typhoid fever may be carried by flies from a patient inhabiting one of the alley houses, often situated in the interior of a fine residence block, and contaminate the food and drink of neighboring homes. The contagion of diphtheria, scarlet fever and tuberculosis may be spread by servants from these plague spots to the very best families.

The question involves both money and education; those who can not invest in sanitary homes can at least contribute their mite to the employment of trained agents engaged in the prevention of sickness and distress, or render, what is far better, some personal service in this uplifting work. Who can deny the influence of a friendly visitor in teaching his fellow-man the value of a clean home, proper food and cooking and sober habits, in the preservation of health and morals?

It is a lamentable fact that only about 1,500 of our residents are engaged in charitable and uplifting influences. The same men and women who subscribe to the Associated Charities, social settlements, playgrounds, summer outings, prevention of tuberculosis, day nurseries, visiting nurses to the poor and other philanthropic agencies, have so far furnished the means for the erection of 240 buildings which provide clean, healthful homes for 480 families. The wealthy men are not adequately represented, nor are the rank and file of our citizens.

THE PRESENT SITUATION.

It is not difficult to conceive that health officials appointed for a brief period, and clothed with limited authority, are decidedly handicapped in the conduct of their office, and as a result two such officers were found wanting in the control of the sanitary affairs of this city.

In 1895 our present health officer came into office, and it is due to his intelligent appreciation of the needs of the city that a number of sanitary laws and regulations have been framed and enacted. In fact, his efforts for the control of scarlet fever and diphtheria and for a more rigid system of food inspection, with special reference to the milk supply, with corresponding reduction in death rates, will stand out pre-eminently in the sanitary history of the city.

If it is deemed desirable that such important duties and responsibilities should devolve upon one man, he should be sustained by the strong arm of the law. This, however, in the very nature of our government, can not be, and the result is that the health office is not in a position to render the most efficient service. A health officer or board should be invested with full power, from Congress, to declare what shall be deemed nuisances injurious to health and to provide for the removal thereof, to make and enforce health ordinances, etc., subject to the approval of the District Commissioners, and the appointments should be made, as in the case of the assessor or chief of police, during good behavior.

A health officer with an advisory board of health, with the supervising general of the Public Health Service as a member *ex officio,* would offer many advantages. The personal element would be entirely eliminated in the exercise of discretionary power and the health officer relieved from grave responsibilities in passing upon important problems and in the settlement of vexatious questions relating to the employment and discharge of subordinates and in the rigid enforcement of existing laws and ordinances.

Moreover, municipal hygiene is a progressive science, and the Commissioners and congressional committees would be relieved from the consideration of details in the formulation of sanitary legislation if these were acted upon by a board of experts. We do need more deliberative bodies, like the Board of Education and the Board of Charities, competent and willing to give to the Commissioners and the public the benefits of expert knowledge without regard to compensation.

Congress and the Health of the District.

The advocates of sanitary reforms and the improvement of housing conditions gratefully acknowledge the important services rendered by Senators McMillan and Gallinger, and other distinguished members of both houses, in the cause of sanitation of the National Capital. Much has been accomplished, but more remains to be done before we can hope to place the healthfulness of this city on a par with some of the European capitals.

Congress, in the administration of the affairs of the District, has a sacred duty to perform. The general government owns more than one-half of the property in the city, contributes more than one-fourth of the population in the way of officials and employees, not to mention the immense number of American citizens who annually visit the seat of government. In addition, Congress has permitted, during and after the war, 40,000 negro refugees to find shelter as best they could in our midst. For all this the United States simply pays one-half of the taxes; no more; and not infrequently has paid less.

As sanitarians, we contend that in building a city, the capital of a gigantic nation, the first care should be the protection of the health of its people. Its beautifying is essential, but of secondary importance. Economy, however laudable its general purpose, should never be exercised at the expense of public health.

SEXUAL AND MORAL PROPHYLAXIS.

The morbid habits connected with the generative organs may be acquired under a variety of circumstances. First in very young children, a local irritation, due to some abnormal condition of the genitals, may lead to manipulation of the parts and to consequent pleasurable excitement, which is continually renewed, with an entire unconsciousness of the meaning of the practice. The second class includes cases which have reached or are near the period of puberty and have accidentally learned or been taught this habit, which they are able, if so disposed, to successfully combat. In the third class of subjects the habit has a central origin, as in some forms of insanity and idiocy. When we consider that the highest degree of organic power is necessary for the elaboration of the spermatic fluid, we can appreciate how severely the body is taxed if the emission of the seminal fluid becomes a drain on the system. Excessive, premature and illegitimate sexual intercourse is injurious, and the injury is especially great when excited by unnatural means, because the imagination is brought into action to produce the mental impression.

The effects are anemia, disordered digestion, general loss of health and strength, with feeble, rapid and irregular heart action and a greater tendency to sickness and incapacity for mental and physical work. Indeed, anyone familiar with the subject realizes that those morbid habits are a frequent cause of breakdowns, and contribute greatly to the number of defectives in charitable and reformatory institutions. A special investigation, conducted by Dr. Paul B. Johnson for the Committee on Social Betterment, shows that the majority of the inmates of the workhouse have been addicted to the habit, and it is one of the greatest evils which the authorities of industrial and reform schools have to contend with.

According to Hammond: "The countenance parts with its natural hue, the eyes lose their luster, the skin becomes dry and harsh, and the hair is deprived of its natural moisture and falls out. The mental faculties become more or less affected and often great despondency, apathy for society and all kinds of amusements, with loss of memory and irritability of temper, is evinced. The effects on the generative system are also marked. There is irritability of the neck of the bladder, accompanied by discharge of mucus and prostatic fluid often mistaken for semen. At the same time seminal emissions are prone to occur upon the least provocation, sometimes without any manual interference, but solely through mental impressions, derived through the imagination at the sight of some lascivious picture or scene, and nocturnal emissions are quite frequent."

This is an extreme picture of the unfortunate victims, but it is well to remember that there is a difference in degree commensurate with the extent of the habit.

In the correction of the habit, should any local source of irritation, malformation or disease exist, it should be removed.

In many instances the moral sense must be acted upon to break up the habit. As Professor Dana puts it: "Man is distinguished from the brute by his self-control. Let him bear this fact in mind and raise himself by a determined effort of the will. Pure thoughts and chaste associations, vigorous physical exercise and a resolute effort to act the manly part will always be successful."

By way of prevention it has been suggested that judicious advice may with advantage be given before even a knowledge of the habit is acquired. and no one is more competent to do this than the father, the family physician or teacher. Cold baths and a well regulated system of gymnastics are of importance, since bodily exercise works off the exuberant animal spirits and indisposes to venereal desires, while idleness is a great incentive.

One of the most difficult problems is to keep young men, frightened by the shameful advertisements and literature, from consulting designing quacks. Many a young man has been driven to insanity or suicide by attributing an occasional nocturnal emission to his former habit, however rarely practiced, when in reality it may be only Nature's safety valve in a continent and otherwise healthy subject, or the emission may be a symptom of a disease for which he is in no way responsible.

If the proprietors of our newspapers could but witness the physical and mental wrecks produced by mountebanks, such harmful matter would not be tolerated in their advertising columns. It seems difficult to convince the average layman that a reputable physician never advertises his skill, and those who do are often men without any medical education whatever.

While it is true that by far the majority of victims of quacks belong to the more ignorant classes, the frequent complaints which reached the writer from college men induced him to ascertain what steps, if any, had been taken by the Post Office Department to prevent imposition and fraud. For this purpose he examined the fraud order files of the Assistant Attorney General's Office of that Department covering a period of two years, and found some of the most glaring and shameful cases on record. It is clearly in the interest of humanity that a few abstracts of cases should be published for the lesson they convey.

MEMORANDUM FROM THE ASSISTANT ATTORNEY GENERAL'S OFFICE OF THE POSTMASTER GENERAL.

"*In re* Boston Medical Institute F. L. Hibbard, E. R. Hibbard, Belvue Medical Institute, B. Norton, B. Newton, Chicago, Illinois. * * * The Boston Medical Institute is engaged in conducting a mail order business for the medical treatment of private diseases of men. * * * Patients are secured mainly by the local distribution of pamphlets calling attention to those conditions of men which the institute pretends to treat and urging those so afflicted to write to the institute for the treatment. This advertising matter is obviously prepared to excite alarm and fear in the minds of those reading it and in anywise feeling themselves in need of such treatment as is offered, and especially on the part of uninformed young men of the more or less ignorant class, who appear to form the considerable part of the institute's patients. These pamphlets the Inspectors learned are distributed at the rate of at least a million a year. The extent to which the business is operated is also indicated by the report of the Postmaster that an average of 250 letters a day is delivered to these parties. These booklets could not be sent through the mails because of their obscene nature and the Department has excluded them upon this ground.

"Among the solicitations to obtain patients are promises that they will have the benefit of the services of skilled specialists renowned in this country and abroad * * * that the institute will guarantee absolutely to cure them or refund all money paid, and generally that patients will be furnished by this institute with services and treatment superior to that procurable elsewhere. In truth, the cases of patients do not have the benefit of consideration by skilled specialists, nor are they considered by a staff of specialists. In fact the only physician who considers these cases is a Dr. Edmonston, who is shown by the investigations of the Inspectors to be a man of mediocre ability, who is not recognized as a specialist and is without standing in his profession. * * *

"Patients are not furnished with frank opinions upon their cases, but are fraudulently led to buy treatment, when the institute recognizes their cases to be of such a nature as to make it impossible for it to give any treatment of value to such persons by mail will be shown by the evidence stated hereafter.

"That the promise to refund the money of uncured patients is not honestly intended to be fulfilled, but it is instead the intention to make the matter of refund a subject of controversy with patients and ultimately to refuse absolutely to return the money, will also be shown by the evidence to be stated later. The true value of the treatment furnished by this concern to the unfortunates who seek its services can be appreciated not only from the standing of its hired physician, but also from the number of complaints made to the Department by young men that, after being treated for several years for what were largely in the beginning imaginary complaints, they found themselves at last in unfortunate conditions that demanded careful services of competent physicians. The actual methods employed in the conduct of this business can best be appreciated from an examination of a few of the complaints made to the Department in this matter."

Assistant Attorney General R. M. Webster then submits the evidence in a number of cases, of which the following is reproduced:

"J. W. S——— of ———. His complaint shows that in June, 1904, when he was about 19 or 20 years of age, he was influenced by the advertising literature of the Boston Medical Institute to seek treatment from it through the mails for occasional slight emissions. Such condition in a healthy young man of the age of Mr. S——— at that time is entirely normal. This concern, however, represented to Mr. S——— that he was in a serious state, suffering from sexual debility and in need of immediate and the most skilled attention. Quoting the language of the institute to S———, he was advised that his case had been carefully considered by the institute staff of specialists who had decided that he was suffering from spermatorrhea, passive congestion of the kidneys, partial impotency and nervous debility, and he was informed that unless he speedily obtained energetic and well-directed treatment the inevitable result will be, not only a breakdown of the general nervous system but a complete extinction of the sexual powers themselves." He was further told, "We are pleased, however, to state that, if you at once begin an efficient medical treatment, we do hereby absolutely guarantee your ultimate restoration to perfect health or refund of every dollar paid to us in fee, and it is our belief that the same can be brought about in from 2½ to 4 months."

Service and medicines were offered for $10.00 for the first month and $8.00 for each of the succeeding months.

"Mr. S——— complains that he treated with this institute for 23 months, at the end of which time his health was completely wrecked and he was compelled to go to his physician for attention. This physician was seen by the Inspectors and reports that S———'s condition was most lamentable when he received the case.

"While S——— was told at the commencement that he would probably be cured in from 2½ to 4 months, correspondence sent him by the institute reveals the fact that, to persuade him to continue the treatment for the two years that he did, he was from time to time advised that his progress was entirely satisfactory, that he was constantly improving, and that, if he would but continue the treatment a little longer, he would be ultimately completely cured. Here follow extracts from a few of these letters which are quite significant. On August 16, 1905, when he had been under treatment a year, S——— was advised, "We are very well pleased with the improvement in your condition * * * and if you will keep on with the treatment a little longer, these symptoms will also disappear and you will leave our care a healthy and vigorous man, and in full possession of strength and power to enjoy life." On December 25th, 1905, he was advised: "We are glad to see that you are improving so nicely and assure you that, if you continue to be regular as before, it will not take long to finish the treatment." On January 20th, 1906, he was persuaded to continue the treatment by a reduction of the prices as follows: "As you have been a faithful observer of our rules, we will reduce the price to $7.00 per month." * * * On March 28th he was advised that he was progressing very nicely indeed "and that if he would continue the cure is (not) far distant."

"Mr. S——— continued the treatment up through June, 1906, when he finally became convinced that the institute was not curing him and was only injuring his health and securing more money from him without giving him any real benefit. He therefore demanded the return of his money in accordance with the promise and guaranty made to him that if he was not cured his money would be refunded. The letter of the company written him in reply to this demand, which is dated June 26th, 1906, refuses him his money under the pretext that he had not been guaranteed a cure in any definite time, and despite the fact that the institute had been handling his case nearly two years it had the audacity to suggest that it still felt confident that it could absolutely cure him if he would indefinitely continue the treatment. In this way and under such pretext the company refused to return him his money and has never done so. When S——— attempted to press his claim for the return of his money he was advised that his "scurrilous, defaming and blackmailing letter would be placed in the hands of our attorney to prosecute you to the full extent of the law."

Other cases suffering from imaginary sexual neurasthenia, varicocele, etc., are cited and all present the same sad picture of misplaced confidence on the one hand and of avarice and depravity on the other.

One of the patients, a Mr. H———, aged 20 years, after unsuccessful treatment demanded the return of his money, and was finally informed by the institute: "Let us tell you now that if you cause us any trouble about this matter, or try to do so, we will have good grounds against you for slander and defamation of character. We do not wish to get into any trouble with you about the matter, but if you persist in it and bring it on yourself we are sure that we will show that at the time you began the treatment you were practicing these secret masturbation habits * * * we will also have something to say along some other lines when you are done with all you wish to do * * * we will also show you that this very letter in our possession today on this subject is a ground for blackmail on your part against us."

A fraud order was issued in this case on November 25th, 1907.

On May 5th the Assistant Attorney General wrote to the Postmaster General: "This Office is now (May 5th, 1908) in receipt of advertising literature circulated through the mails which indicates that the business is being continued under the names of Specialists Specific Co., and Mr. E. C. Albee, and that the fraud order of November 25th is thereby circumvented. A fraud order covering these addresses was issued May 5th, 1908. It is gratifying to know that E. R. Hibbard was indicted October 19th, 1907, at Chicago, convicted April 13th, 1908, sentenced to two years in Bridewell Penitentiary and fined $1,500 and costs; $10,000 bond pending motion for new trial.

MEMORANDUM FOR THE POSTMASTER GENERAL.

"*In re* The Appliance Company, C. Bartholomew and Box No. 337, Detroit, Michigan.

"This person is selling a medicinal appliance, being in the nature of a rubber band, for the use of men as a cure for impotency. In fact the device is worthless for the purpose for which it is sold, and its use is apt to be dangerous in the hands of the unexperienced. Communication is obtained with those intended to be defrauded by means of advertisements in newspapers, the form of which is stated by Mr. Bartholomew to be substantially as follows:

"Men—don't pass this by. May we send you free information of our patent appliance, which has astonished the world and dumfounded medical science for Lost Vitality. Indorsed by Physicians. Carried in vest pocket and lasts a lifetime. Appliance Co., Dept. 25, Drawer 337, Detroit, Michigan."

Samples of the advertising literature and of the device were submitted to the Treasury Department to secure the opinion of the Surgeon General of the Public Health and Marine Hospital Service as to the value of the same and the Secretary of the Treasury, under date of March 28th, 1908, submitted a report of the Marine Hospital Service, dated March 12th, 1908, which is as follows:

"The Surgeon General,
"Public Health and Marine Hospital Service.

"SIR:—The Bureau Sanitary Board has the honor to report that in accordance with the Bureau order of the 9th inst., it has considered the question contained in the letter of the Postmaster General dated March 5th, 1908, as to the value of the device submitted therewith for the treatment of impotence in men, and as to the truthfulness of the representations appearing in the advertising literature of the Appliance Company which offers the above-mentioned device for sale. While impotence may rarely be attributed to moral weakness, it is practically always produced by excesses, some nervous lesion or a constitutional disease.

"It is believed by the Board that the appliance is without therapeutic value in the treatment of the underlying causes of this condition, and that the literature is misleading as it represents that the appliance will distend the sensitive nerve, stimulate nature and 'enlarge small shrunken organs to their natural size, causing them to become strong and vigorous,' whereas as a matter of fact, from its character and method of use, it would only produce constriction and promote congestion. While in this literature it is stated that drugs have never cured a single person of lost vigor, yet two prescriptions are given with the appliance for 'night emissions, gleet, premature discharge and loss of semen.'

"Prescription No. 1 is a combination of drugs frequently used by physicians in the treatment of gonorrhea and No. 2 is a compound of drugs used for the cure of syphilis. These prescriptions are without efficiency in the treatment of most of the conditions mentioned in the literature and if taken in sufficient amount may result in positive harm.

"Respectfully,
"H. D. GEDDINGS,
"Asst. Surgeon General, Chairman.
"J. M. EAGER,
"Asst. Surgeon General.
"JOHN W. KERR,
"Asst. Surgeon General.

"Approved,
"W. WYMAN,
"Surgeon General."

This same party was recently indicted, with one of his agents, at Tampa, Florida, for conspiring to conduct a scheme to defraud through the mails in connection with the sale of this appliance, it being charged that the appliance was worthless for the purpose sold * * * and was fined $300.

Notwithstanding the statement of the Inspector that M. Bartholomew promised the Court at Tampa in February to discontinue entirely the conduct through the mails of this business, he has since then and is now conducting the business as aggressively as it is in his power to do so * * * 2nd Fraud Order issued May 2nd, 1908.

The records of the Post Office Department disclose the fact that C. (Coryell) Bartholomew was arrested August 2nd, 1901, at Jackson, Michigan, indicted July 6th, 1901; pleaded *nolo contendere* December 30, 1901; sentenced to pay costs. Arrested May 14, 1904, indicted April 29, 1904, for the same offense, pleaded *nolo*. Sentenced April 19th, 1904, to pay fine of $150 or six months in House of Correction. Paid fine. Arrested February 13th, 1907, fraud scheme and conspiracy. Indicted April 24th, 1907, at Tampa, Florida, convicted February 18, 1908, fined $300, which he paid. This record shows a most persistent audacity.

Space will not permit to present the details of the numerous fraud orders against concerns "selling through the mails to men a certain vacuum appliance which they represent will make weak men strong and will also cure impotency, stricture, varicocele and develop weak and shrunken organs in men. Price $5.00 and $10.00 each." The writer has examined the memoranda prepared for the Postmaster General in the Manville Supply Co., St. Joseph, Mo.; the Strenoa Co., of St. Louis; The Southern Instrument Co., Houston, Texas; Southern Sales Co., Magnolia Sales Co., Houston; National Supply Co., Milwaukee; Health Appliance Co., Seattle, and numerous concerns in Chicago and Denver, in all of which cases fraud orders were issued.

In this category also fall the fraudulent representations made by Dr. Hall's Electro-Vigor Company in its exploitations in New York City, Chicago, San Francisco and Philadelphia, of a certain electric belt which is represented to cure sexual weakness in man, and all nervous and stomach troubles, rheumatism, etc. The appliances are sold for from $20 to $40. The evidence reveals the fact that the business was carried on in New York by a man without any medical qualifications, who was not a physician, and the Attorney for the company admitted that this man had no other qualification than his experience in the concern. Dr. Hall was asked whether the methods followed at the other offices were the same as those shown by the evidence in the case to have been used at the New York office. He answered in the affirmative. A fraud order was issued in this case September 7, 1906.

To this class also belong the many "Lost Manhood Restorers and numerous debility cures," described by Dr. L. F. Kebler, Chief of the Drug Laboratory, Bureau of Chemistry, U. S. Department of Agriculture, in his exhaustive article on "Monstrous and Fraudulent Methods of Exploitation."*

"Ambaline, a mixture of camphor and ammonia water, containing also salts of ammonia and sodium; a lotion to be applied to the affected part and claimed to possess miraculous powers." The treatment advertised by Bradford & Co., Cincinnati, for sexual weakness, premature old age, etc. The "Cactus Products," exploited by the Cactus Product Company, Philadelphia. "Calthos," the world's greatest remedy for the treatment of male affections, claimed to be imported by the Von Mohl Company, Cincinnati, Ohio. "Capidene" and "Mormon Bishop Pills," placed on the market by the Davol Medicine Company, San Francisco. "Regenerative Tablets," exploited by the Fallopia Lynn Company, St. Louis, Mo. "Restorative Remedies," exploited by parties who have operated at one time as the Dr. Knapp Medical Company and at another time as the Dr. Raynor Medical Company. "Paris Electro-Medicated Crayons Paris Food," by Dr. Stevens & Co., Columbus, Ohio. "Vital Restoratives," exploited by the English Restorative Company of Denver. The "Vitalia" remedies advertised by the Vitalia Company, managed by Dr. Frederick Main, alias Dr. Na Morg, Jackson, Mich., "Vigoro" Vitality Pills, Yousof's Salve and many other preparations.

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*"Journal American Medical Association," November 10-17, 1906.

SEXUAL DISEASES.

In this connection it may not be out of place to refer to diseases arising from impure sexual intercourse, whether it be a simple excoriation, which has been inoculated with some one of the septic germs, or whether it be an inflammation of the urethra produced by a specific discharge, or whether it be one of the forms of Syphilis as now recognized.

The absence of reliable statistics in venereal diseases is very much to be deplored, for if we wish to approach the subject intelligently, we should know something more definite as to their prevalence in civil life.

An appropriate idea may be gotten by a study of Army Statistics. Dr. Munson (in his "Military Hygiene," p. 823) giveh the latest admission rate per 1,000 strength as follows:

Germany	27.9	Austria Hungary	61.
Russia	36.	United States	73.7
Japan	36.	Great Britain (Home Statistics)	173.8
France	40.9	Great Britain (Indian Statistics)	522.3
Holland	48.1		

The Annual Admission Rate per 1,000 strength for the three years, 1890-92 (Munson):

	Primary and Secondary Syphilis.	All other venereal diseases.
Germany	5.5	21.5
France	9.	34.9
Russia	13.1	29.9
Italy	13.9	57.4
United States	16.83	57.96
Dutch troops (Home Stat.)	14.8	55.
East Indies	47.	408.6
British troops—		
(Home statistics)	101.7	101.9
(Indian Statistics)	175.4	262.6

It is a lamentable fact that the very countries in which the sentiment, both in and out of the profession, is strongly against recognizing the evil, furnish the highest army rates, while in countries where some special regulations are in force preventing the spread of venereal diseases, such as weekly inspections of the men and periodical examination of the women engaged in prostitution, with compulsory isolation if such are found diseased, the army rates are lowest.

The comparative amount of army and civil venereal diseases is not known, because we have no statistics of the amount in civil life.

According to Fournier one-seventh of the population of Paris is syphilitic, and the mortality of infants born of syphilitic parents in many hospitals of that city reaches 84 to 86 per cent.

According to Dr. Weiss there are 150,000 syphilitics in Berlin or 12 per cent. of the inhabitants.

In 1901 a committee of seven, under the auspices of the Medical Society of the County of New York, made an investigation into the prevalence of venereal diseases, and from the information received from private physicians, reports of the hospitals and dispensaries concluded that there were not less than 243,000 cases of venereal diseases treated in one year in that city. During the same year there were only 41,585 other cases of infectious or communicable diseases reported to the Health Department, viz.: measles, 12,570; diphtheria, 11,001; tuberculosis, 8,877; scarlet fever, 7,787; chicken pox, 99. In other words, the morbidity from venereal diseases was nearly six times greater than that from all the above-named infectious diseases combined.

Parkes of England says: "It is a question whether a large number of the young men of the upper and middle classes do not suffer in youth from some form of venereal disease. In the lower classes it is perhaps equally common."

Neisser of Germany holds that gonorrhea is, with the exception of perhaps measles, the most widespread of all diseases. Other German authorities have computed that fully three-quarters of the adult male population, and one-sixth or more of the adult females have contracted gonorrhea, and that 15% of the population is syphilitic.

Dr. Prince A. Morrow of New York, based upon a large personal experience and the statistics collected in that city and in Baltimore in 1907 by a Committee on Sanitary and Moral Prophylaxis, says: "Assuming that our population is more virtuous than that of Europe, it must be a conservative estimate that in this country the morbidity from gonorrhea would represent 60% of the adult male population, and that of syphilis from 10 to 15%." Which would mean that between 3 to 4 million cases are annually treated in this country. According to this same author 20% of the cases occur before the 21st year; 60% before the 26th year and 10% of the men who marry infect their wives. The Report of the New York Committee "would indicate that nearly 30% of all venereal infections occurring in women in private practice in that city are communicated by their husbands"; and from his personal observation at the New York Hospital, extending over a period of several years, he concludes that "fully 70% of all women who come therein for treatment were respectable married women who had been infected by their husbands."

VICE DISEASES IN THE DISTRICT OF COLUMBIA.

Doctor Henry C. Macatee, of the President's Homes Commission, has made a special study of the prevalence of so-called vice diseases in the District of Columbia. The results have been tabulated and will be found in the Table on the next page. The period covers nine years, except in the case of Providence Hospital, Columbia Hospital and the Children's Hospital, for which institutions the data cover only two years. From this table it appears that, out of a total of 274,611 patients treated, 38,183 cases were vice diseases, viz: 9,869 syphilitic affections; 3,643 cases of chancroids and 14,435 cases of gonorrheal affections. In addition to the 27,947 cases of sexual diseases, there were treated 9,510 patients for alcoholism; 409 for delirium tremens; 256 for the opium habit, and 61 for the cocaine habit; an average of 4,243 cases per annum of vice diseases, or nearly 1/7 of all the cases treated in the city hospitals. As a matter of fact, 23.6% of all the cases treated in the Washington Asylum Hospital and 31.6% of those treated in the workhouse, were vice diseases. The majority of the patients treated in the hospitals belonged to the dependent classes. We have no statistics as to the prevalence of vice diseases among the middle and upper classes.

CASES OF VENEREAL DISEASES, ALCOHOLISM, OPIUM HABIT AND COCAINE HABIT TREATED AT HOSPITALS AND DISPENSARIES OF WASHINGTON, AND THE RELATION THESE DISEASES BEAR TO THE TOTAL NUMBER TREATED.

INSTITUTION.	Year.	Number treated in Year. All Diseases.	Syphilitic Affections.			Gonorrheal Affections.								Alcoholism.	Delirium Tremens.	Opium Habit.	Cocaine Habit.	Total Number Vice Diseases.	Per cent. Vice Diseases.
			Syphilis.	Condylomata.	Tabes dorsalis.	Gonorrhea including Arthritis.	Salpingitis.	Opthalmia.	Bubo.	Vulvitis and Vaginitis.	Stricture of Urethra.	Epididymitis and Orchitis.	Chancroids.						
Washington Asylum Hospital . . .	1899	1258	35	2	5	15				10	7	1	22	144		19		260	20.6
	1900	1417	67		3	25					3		10	244		3		355	25.
	1901	1404	50		8	58	3				16	2	44	169		3		353	25.
	1902	1257	68		6	33				8	18	3	9	118		7		270	21.4
	1903	1542	56	3	2	40				3	8	4	10	174	6	9		315	20.4
	1904	1669	66		1	31	1	1		2	10	4	13	391	28	19	8	575	34.4
	1905	1909	72		8	33	3	3	16	7	7	10	32	97	30	11	11	340	17.8
	1906	2021	100	5		40	10	1	7	7	2	10	21	250		19	4	476	27.
	1907	2185	67	1	2	21	10		8	7	1	10	9	300		24	3	463	21.
D. C. Work House . . . . *Includes Almshouse.	1899	2264	146			152								600				898	39.6
	1900	*5369	209		2	246			37		21	19	374	437				1345	25.
	1901	2265	101			225					18		205	117				666	29.4
	1902	1073	54			62				16	24		53	56		7		272	25.3
	1903	1475	52			141					15		73	106		5	4	396	26.8
	1904	1267	55			162					19		83	145		8	5	477	37.6
	1905	1587	66			180					11		111	174		9	5	556	35.
	1906	1856	78			223					2	9	90	161		6	7	576	31.5
	1907	2046	85	12		310	12		10		4	18	67	198		6	10	720	35.
D. C. Almshouse	1899	851	25											22				47	5.5
	1900	see Work House																	
	1901	942	8		1									16				25	2.6
	1902	592	5		1									7				13	2.1
	1903	661	6		1						8			13				28	4.2
	1904	633	10		1						8			18				37	5.8
	1905	770	11		5						8			15				39	5.
	1906	923	15											8				23	2.5
	1907	351	4											12				16	4.5

INSTITUTION.	Year.	Number treated in Year, All Diseases.	Syphilitic Affections.			Gonorrheal Affections.								Alcoholism.	Delirium Tremens.	Opium Habit.	Cocaine Habit.	Total Number Vice Diseases.	Per cent. Vice Diseases.
			Syphilis.	Condylomata.	Tabes dorsalis.	Gonorrhea including Arthritis.	Salpingitis.	Opthalmia.	Bubo.	Vulvitis and Vaginitis.	Stricture of Urethra.	Epididymitis and Orchitis.	Chancroids.						
Freedmen's Hospital	1899	2012	43	1		15	9		11		11	11	7	27				135	6.7
	1900	2239	64	2		30	24		17		10	12	3	26		1		189	8.4
	1901	2247	71			16	16	1	7		8	11	4	9				143	6.3
	1902	2225	31	5	1	16	34		37		19	14	2	16		1		176	7.9
	1903	2486	74		1	16	52	2	43		25	13	15	35				276	11.1
	1904	2907	77	5		27	50		57		40	4	14	57				331	11.3
	1905	2918	88	2	1	20	28	4	39	2	13	8	14	64				283	9.7
	1906	2207	116		2	34	51	5	46	3	15	18	5	44				339	15.3
	1907	2366	121		6	73	94	12	35	10	19	22		58				450	19.
Freedmen's Hospital—Dispensary .	1899	4779	313	7	4	146		1	46		9	35	37	16				614	12.9
	1900	6202	385	15	5	79			26		13	38	18	7				586	9.4
	1901	5804	192	8	8	83			35		10	34	24	18				412	7.0
	1902	5397	450	5		206			14	3	1	13	26	9				727	13.4
	1903	6044	491	2		236	1	1	43	1		25	54	14				868	14.3
	1904	6081	670	6	2	292	1	7	37	8		27	39	19		1		1109	18.2
	1905	6597	549	16	3	368	6	5	44	8		44	64					1107	16.7
	1906	4426	350	5	8	239	7	7	27	7	7	25	38	7				727	16.4
	1907	4631	455		10	213	6	2	22	7	5	17	23	3				763	16.4
Emergency Hospital	1899	5388	1				1	2			8			165	21	1		199	3.7
	1900	4219	2			1	4				11	11	4	125	21	1		180	4.2
	1901	5588	5					1	5		23	1	2	252	25			314	5.6
	1902	5235	10			2	1		1		9	2	4	555	33	7		624	11.9
	1903	5620	4		1	1	6		2		9			318	43	1		385	6.8
	1904	7132				3	11		1		6	6		349	36	1		413	5.7
	1905	8281	1	2		1	7	2	2	1	3	17		469	43	1		549	6.6
	1906	10,399	1	1			20	1	2		14	38		591	48	20	4	698	6.7
	1907	9844	1			1	17	2	6		8	14	3	895	60	3		1010	10.2
Central Dispensary . . . . * Record for Genito-Urinary Clinic missing.	1899	6763	160	9	1	351	28	12	84	23	22	52	180	9				931	13.6
	1900	6445	231	15	1	408	27	2	166	58	9	46	253	1				1217	18.8
	1901	5211	211	12	2	428	34	2	143	53	14	36	238	7				1180	22.6
	1902	7211	279	11	2	500	53		172	14	24	43	139	9				1246	17.2
	1903	7941	322	18		392	54	27	121	12	26	74	209	16				1271	16.
	1904	*8110	281	*	1	*13	64	13	*9	14	*	*3	*	7				*405	*4.9
	1905	9076	402	22		539	68	13	141	14	15	74	360	17				1665	18.3
	1906	6434	354	13	2	421	48	6	130	6	22	96	295	10				1403	21.8
	1907	5736	328	13	3	312	52	1	117	11	31	93	175	5				1141	19.8

INSTITUTION.	Year.	Number treated in Year. All Diseases.	Syphilitic Affections.			Gonorrheal Affections.								Alcoholism.	Delirium Tremens.	Opium Habit.	Cocaine Habit.	Total Number Vice Diseases.	Per cent. Vice Diseases.
			Syphilis.	Condylomata.	Tabes dorsalis.	Gonorrhea including Arthritis.	Salpingitis.	Opthalmia.	Bubo.	Vulvitis and Vaginitis.	Stricture of Urethra.	Epididymitis and Orchitis.	Chancroids.						
Garfield Hospital	1899	1103	11	1	2	13	24		11		7	9	2	29		9		118	10.6
	1900	1246	14	1	1	19	26		12		14	12	3	34		3		137	10.9
	1901	1307	19			15	22	1	12		7	13	6	41		12		148	11.3
	1902	1600	24		2	8	30		20		15	12	6	56		10		183	11.4
	1903	1401	26		1	21	32	1	25		9	6	17	69		6		213	15.2
	1904	1182	26	1	2	30	20		10		6	7	14	50		1		167	14.1
	1905	1480	32		1	20	37		18	2	11	20	9	80		2		233	15.7
	1906	1432	32		3	16	36		5	2	20	19	4	59	1	4		201	14.
	1907	1408	23	2	1	28	32		12	3	12	11	8	48		8		188	13.3
Garfield Hospital—Dispensary	1899	512	25	1		30	2		10	5	6	4	6					89	17.3
	1900	642	72			40	2		9	1	6	1	6					137	21.3
	1901	755	51			35	6		17	3	3		13					128	16.9
	1902	1033	63	2		37	4		11	2		5	6	2				132	12.7
	1903	908	72	2		41	6		14	1	7	8	11	2				164	18.
	1904	831	44	1		38	12		10	4	1	4	10	4				128	15.4
	1905	806	36			34	3		12	3	2	7	9	1				107	13.2
	1906	816	33	1		37	18		15	2	1	2	9					118	14.4
	1907	No report.																	
Providence Hospital	1906-07	2773	17	1	1	11	20			6	6	12	2	428	10	4		518	18.6
	1907-08	2875	20		2	9	34		17	2	6	7	1	382	4	4		488	16.9
Columbia Hospital	1906	1261		1			68	28		4								101	7.2
	1907	1300		1			95	16		3								115	8.8
Columbia Hospital—Dispensary	1906	1718	46	4		44	135	1	8	18			9	3				268	15.6
	1907	1697	45	7		30	164	1	10	13			17					287	16.9
Children's Hospital	1905	638	8			3		2	7	3				1				24	3.7
	1906	743	7					6	2	4								19	2.5
Children's Hospital—Dispensary	1905	2899	32			13		2	9	19								75	2.5
	1906	4457	88	1		11		2	7	38								147	3.2
Total.		274,611	9510	233	126	8062	1741	196	2049	453	708	1226	3643	9510	409	256	61	38,183	13.03
Per cent of each			3.46	0.08	0.04	2.89	0.63	0.07	0.74	0.16	0.25	0.44	1.32	3.46	0.14	0.09	0.02		

SYPHILIS.

This disease first attracted attention in Europe in the latter decade of the 15th century. During the siege of Naples by the French troops under the command of Charles VIII in 1495, a disease characterized by ulcers on the genitals, general eruptions of the skin, violent pains in the head and limbs broke out among the French soldiers and the civil population and after the return of the French soldiers the disease appears to have spread rapidly throughout France and Europe. Quite early in the history it was recognized that the disease was principally contracted during sexual intercourse and hence was named lues venerea, while the populace commonly spoke of it as the Frenchman's disease. The real nature of syphilis remained a mystery until two years ago when an organism was isolated called the "spirocheta pallida," which is believed to be the causative factor. This micro-organism evidently clings to the secretions of syphilitic ulcers, to the tissues of diseased organs and possibly also invades the blood and the mammary glands after it has ceased to be a purely local affection. The virus may be conveyed in an extra-genital way by kisses, use of infected pipes, cigars and cigarettes; by glass blowers and the mouthpieces of wind instruments; by dental and surgical instruments; by the act of suckling, from infants to nurse and conversely; in tattooing, and during digital examination by physicians, in case of abraded surfaces, hangnails, etc. There is every reason for assuming that the virus may be transmitted to the offspring, either through the sperma or the blood of a syphilitic mother.

Syphilis is indeed a disease of the blood and affects every tissue of the body. Apart from the long duration of the disease, and the pecuniary losses involved by care and treatment and arrest of the earning capacity, its effect upon longevity and procreation are most destructive.

Syphilis is responsible for 42% of abortions and miscarriages, from 60 to 86% of the offsprings of syphilitics die before or shortly after birth, and those who survive are subjects of degenerative and organic defects, transmitted to future generations. Fournier's personal statistics show that 90 women infected by their husbands became pregnant in the first year of married life, 50 of these aborted, 40 carried the offspring to full term, but of these only 2 survived. He also gives statistics, based upon authentic sources, where syphilis has practically extinguished the posterity of certain families. One table gives out of 216 births 183 deaths; another out of 157 births 157 deaths, or a mortality of 100 per cent.

The disease swells the number of inmates of almshouses, asylums for the insane and homes for incurables, wrecks the health and happiness of many families and leads to premature decay. Morrow states that "every case of hemiplegia occurring in a man less than 40 years of age, not addicted to alcohol or affected with lesions of the circulatory system is eight, or, more correctly, nine times out of ten of syphilitic organ.

The proportion of ocular paralysis resulting from syphilis is about 75 per cent on the average. * * * In statistics embracing 743 cases of cerebral syphilis, 354 of which were followed up to a known termination, 77 were cured, 68 died, while the remaining 209 survived, but with various infirmities of a grave character and in every case irremediable."

According to the statistics of Erb, Althaus, Fournier and others from 80 to 90% of the cases of locomotor ataxia are of syphilitic origin. In 3,429 cases of tertiary syphilis Fournier found diseases of the nervous system in 1,085 instances, cerebral syphilis in 461, spinal affections in 40, general paralysis in 32 cases.

GONORRHEA.

This disease, so often regarded as a trivial affection by frivolous young men, is also specific in character, caused by a micro-organism discovered by Neisser in 1879. The organism clings to the discharges in acute and chronic cases and may persist long after the disease is apparently arrested. While at first a purely local affection, it may produce destructive inflammation resulting in stricture of the urethra; it may also extend to the testicle, prostate gland, bladder and kidneys, and ultimately affect the heart, joints and other vital organs. Indeed the disease is believed to be responsible for more misery, ill health and race suicide than any other sociological factor.

The average duration of acute cases is from four to six weeks, but there are a large number of chronic cases requiring at least six months' careful treatment and, according to the investigations of a Committee of the American Medical Association, 3 per cent of the cases are practically incurable. One of the most baneful effects is the latency of the disease and the great danger of communicating the virus to wives by husbands who considered themselves as having been cured before marriage. It is certainly startling to be told by competent specialists that fully 80% of all the operations for inflammatory diseases peculiar to women, practically all the pus tubes; 75% of the suppurative inflammations of the pelvic organs, 70% of all the work done by specialists for diseases peculiar to women are of gonorrheal origin. It is equally appalling to realize that the same germs are the cause of blenorrhea neonaturum—a purulent affection of the eyes of new-born children which contributes a contingent to our asylums for the blind of from 10 to 20 per cent—from

40 to 60 per cent before the Crede method of prevention was instituted. Dr. Swan M. Burnett, Professor of Ophthalmology, Georgetown University, expressed the conviction that at least 15,000 of the 50,000 blind persons in the United States lost their sight from this cause, involving a financial loss to the commonwealth of seven and one-half millions annually.

The destructive effects of gonorrhea on the procreative functions have been very properly emphasized in connection with the "race suicide problem." Neisser maintains that gonorrhea is even a more potent factor than syphilis in sterility, and that more than 45 per cent of all involuntary childless marriages are due to this cause.

The remedial measures which have been proposed for the prevention of these diseases and which affect not only the offender, but the wives, the offsprings and not infrequently also perfectly innocent persons are numerous enough, but not so easy of application. Since the chief source of infection is prostitution, the sanitarian suggests that a person afflicted with a venereal disease is quite as much a menace to public health as would be a case of small-pox or any other communicable disease and points with emphasis to what has been accomplished in Europe in the way of official control of prostitution, as a lesser evil, by registration of brothels and their inmates, periodical inspections and the detection and cure of diseased men and women. He will tell us, and the statistics will support him, that the prevalence of venereal diseases is least where sanitary measures are most rigorously enforced.

The Medical Profession is by no means agreed as to the propriety of this method, mainly because such a system seems too much like a recognition of the inevitableness of the social evil and practically an official sanction of it. Others, moreover, with good reason assert that licensing and sanitary inspection tend to produce clandestine prostitution, which has heretofore furnished the largest number of syphilitic cases. On the whole we may conclude that Health Officers in this country are not prepared to advocate the European plan of inspection and license.

CRUSADE AGAINST THE SOCIAL EVIL.*

The subject of prostitution has always been considered of great sociological and economic importance by persons who have witnessed the sad effects among the inmates of hospitals, prisons, almshouses, asylums for the blind, etc. It is gratifying to note that in 1858, just fifty years ago, a most intelligent and painstaking study was made by Dr. Wm. W.

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*I am indebted to my friend Dr. Edward L. Morgan for a number of valuable references to the literature of the subject.

Sanger, Resident Physician of Blackwell's Island, under the auspices of the Governors of the almshouse of the city and county of New York. A few passages from the introduction are reproduced for they are as applicable now as when first indited by his graceful pen.

"Hitherto reticence has been the policy. This position has been held too long, for it is false in principle and injurious in tendency. The day has arrived when the shroud must be removed, when the public safety imperiously demands an investigation into the matter; when those who regard it as a small wrong may have their attention directed to its real proportions. * * * A small matter it decidedly is not. * * * Nor is it unmanageable except when concealed. Stripped of the veil of secrecy which has enveloped it, there appears vice arising from an inextinguishable natural impulse on the part of one sex, fostered by confiding weakness in the other; from social disabilities on one side and social oppression on the other, from the wiles of the deceiver working upon unsuspecting credulity and finally from the stern necessity to live."

The book covers 676 pages and is the first effort on the Western Continent in sexual and moral prophylaxis, but unfortunately has so far been fruitless on account of the general apathy on the part of the general public.

Some of the facts brought out in the detailed investigation of 2,000 prostitutes in New York City are of sufficient interest to be adduced. Of the entire number 750 were between 15 and 20 years, 1,154 between 21 and 39 and 96 over 40 years of age. 1,238 were foreign born and 762 natives of the United States. Of the latter the majority hailed from New York, New Jersey, Connecticut, Massachusetts, Maine, New Hampshire and Vermont. Dr. Sanger is inclined to attribute this to the employment of a much larger proportion of females in manufacturing and sedentary occupations and says: "A young woman of ardent temperament can not but feel the hardship of this position in life, * * * thus when already predisposed in favor of any change, she falls into the hands of the tempter a pliant victim. * * * Beyond the hardships attendant on her daily labor the associations which are formed in factories or workshops, where both sexes are employed, very frequently result disastrously for the female." * * *

In speaking of the foreign class the author says: "Many of the females become mothers almost as soon as they land on these shores; in fact, the probability of such an event sometimes hastens their departure. They exist here in the most squalid misery in some tenement house or hovel. Their children receive none of the advantages of education, for as soon as they can beg they are compelled to aid in the struggle for bread and the most frequent result is that the boys are arrested for some petty theft and the girls become prostitutes, thus contributing to meet the demand caused by the classes already mentioned." In this connection attention is called to Judge DeLacy's letter, page 277.

Of the 2,000 persons investigated 490 were married, 71 of whom still lived with their husbands; 103 left their husbands on account of ill usage, 60 were deserted by their husbands, 43 were deserted by husbands to live with other women; others left their homes on account of non-support, drunkenness, infidelity, and in 75 no specific cause was assigned. There were also 294 widows in the general list, the author believes the principal conclusion to be drawn from the table which he presents "being that the majority of this class (widows) are driven to a course of vice from the destitution ensuing on her husband's death. It has been shown that a large number of them are very young and it can be scarcely necessary to repeat that any young woman in a state of poverty will be surrounded with temptations she can with difficulty resist. Much as this state of society may be deplored, its existence can not be denied."

The section dealing with the hidden springs of the evil is of extreme interest. The causes assigned by the women themselves are as follows:

Inclination, 513; destitution, 525; seduced and abandoned, 258; drink and a desire to drink, 181; ill-treatment of parents, relations or husbands, 164; as an easy life, 124; bad company, 84; persuaded by prostitutes, 71; too idle to work, 29; violated, 27; seduced on board of emigrant ships or in emigrant boarding houses, 24.

Dr. Sanger, in discussing the subject of inclination, adduces considerable evidence to show that "that if a positive inclination to vice was the proximate cause of the fall, it was but the result of other and controlling influences." Most pathetic instances of how destitution, seduction and other predisposing causes led to the degradation will be found on pp. 489-522.

Of the 2,000 cases examined with reference to previous occupation, 933 belonged to the servant class, 499 lived with parents or friends, 285 were dressmakers, tailoresses and seamstresses, and the remainder were engaged in miscellaneous occupations—534 claim to have earned only $1.00 per week; 336, $2.00 a week; 230, $3.00; 127, $4.00; 68, $5.00; 27, $6.00; 8, $7.00; 5, $8.00; two had earned over $20.00 a week, and in 663 the question of earnings was not ascertained.

The investigation revealed the fact that 947 of the 2,000 women became mothers. Of these, 357 single women had 490 children, 357 married women had 791 children and 233 widows had 636 children. Of the 1,917 children born, 1,185 had died before the inquiry, and 732 were alive. The ratio of mortality was as follows:

Children of single women	73 per cent.
Children of married women	58 per cent.
Children of widows	59 per cent.

An average of 62 per cent, or more than six deaths for every 10 children born. On page 487 of the book it is shown that 821 of the 2,000 investigated had contracted specific diseases incident to prostitution, viz: Gonorrhea in 250 instances, gonorrhea and syphilis in 36, and syphilis in 535 cases. The difficulty of securing such information is very great and the probability is that the real number far exceeds this average, but the confessed facts are quite sufficient to estimate the amount of public mischief resulting daily from a mass of prostitutes.

The appendix to the edition of Dr. Sanger's book, published in 1906, states that Dr. Sanger in 1858 placed the number of public prostitutes in New York at 6,000, or one in every 117 inhabitants, while a conservative estimate would now place their number at 30,000, or one in about 55 of the resident population.

In 1902 the Committee of Fifteen, composed of prominent citizens, presented a report on the social evil with special reference to conditions existing in the city of New York, but found it impossible to approximate the number of prostitutes or houses of prostitution; evidence was secured, however, of over 300 separate disorderly apartments in tenement houses. "In many of these tenement houses as many as 50 children resided. An acquaintance by the children with adult vices was inevitable. Almost any child on the East Side in New York will tell you what a "nafke bias" is. * * * The statistics of venereal diseases among children and the many revolting stories from the Red Light District tell how completely they learned the lessons taught them."

Mr. George Kibbe Turner, in a recent magazine article, presents a study of the great immoralities in the city of Chicago, and estimates "the gross revenues from prostitution in Chicago in 1906 at $20,000,000, and probably more. There are at least ten thousand professional prostitutes. Annual average receipts of $2,000 each are brought in by these women. They do not themselves, however, have the benefit of this revenue. Much of it is never received by them. They are, in fact, exploited by large business interests. There are four large interests which are concerned in the exploitation of prostitution. The first of these is the criminal hotels, the second is the houses of ill-fame; the third, the cheap dance halls and saloons, and the fourth, the men—largely Russian Jews—who deal in women for the trade." * * * Major Sylvester, the Chief of Police of Washington, estimates that there are about four hundred prostitutes in this city, confined almost wholly to a certain district, and that special pains have been taken by the police to prevent minors from frequenting these places.

A recent investigation by the Department of Commerce and Labor shows that there are 62 houses of prostitution, with 365 white inmates, of whom 68 were of foreign birth, and 16 houses with 105 colored females, all natives of this country. It is gratifying to know, from an official source, that the number of prostitutes in Washington is placed at 470.

In the crusade against the social evil every effort heretofore made, spasmodically to be sure, has been to apprehend the female offender, and all such attempts have simply resulted in secret prostitution which is far more dangerous in its social and sanitary aspects. Indeed every attempt to make laws upon the subject which apply to women and not to men is most unjust and establishes a different standard of morality for the two sexes.

As expressed by Morrow, "the prostitute is but the purveyor of the infection. She simply returns to her male partner, the prostituant, as he is termed, the infection she has received from another prostituant. In the ultimate analysis it will be found * * * that the most essential cause, the *causa causans,* of prostitution is masculine unchastity—the polygamous proclivities and practice of the male, which lead him to seek the gratification of his sexual instinct wherever and whenever he can find a receptive partner. * * * The woman owes her fall to the aggressive solicitations or seductions of the man. She may even be a *quasi*-willing victim, but she yields rather from sentimental feeling than from sexual inclination. * * * Women are the most pitiless and unrelenting in the ostracism of those of their sex who have crossed the Rubicon of virtue. The virtuous matron who would shield her daughter from all contact with a fallen sister as contaminating, with most indulgent charity smiles upon the very man who may have been the author of her ruin, she may, indeed, receive him as a suitor for her daughter if he is otherwise eligible. * * * As a result of this double standard of morality, society practically separates its women into two classes—from the one it demands chastity, the other is set apart for the gratification of the sexual caprices of its men. It thus proclaims the doctrine, immoral as it is unhygienic, that debauchery is a necessity for its men."

EDUCATIONAL METHODS.

On the whole the present writer believes the remedy lies in public education. The great majority of the people have no knowledge of the subject, simply because of the erroneous assumption that it is not one which lends itself to general discussion.

It is indeed gratifying that such a respectable magazine as the "Ladies Home Journal" has given attention to topics of this character and insisted for several years upon a greater parental frankness with children about their physical selves. In the Editor's Personal Page, in the issue of September, 1908, we find the following courageous statement: "Because of the secrecy with which the whole question is enshrouded it is practically impossible to obtain absolute figures. But so far as the highest authorities have been able, through the most careful inquiries, to secure accurate figures, it is a conservative statement to make that at least 60 out of every 100 young men are today "sowing their wild oats." Of these 60 young men a startling number are either already making or will make a tragedy of marriage. They produce either childless homes, dead-born or blind babies; children with life-long diseases with them, or they will send thousands of women to the operating table. * * * This frightful condition has been brought about largely by two contributing factors. First. The parental policy of mock modesty and silence with their sons and daughters about their physical selves, and second, the condoning in men what is condemned in women. Fathers and mothers, and in consequence girls, have condoned in a young man this sowing of his 'wild oats,' because it was considered a physical necessity; that it 'would do him good'; that it 'would make a man of him,' that 'it would show him the world'—all arguments absolutely baseless. The remedies proposed are along the principles already indicated, viz.: knowledge of the subject, and that 'we fathers of daughters must rid ourselves of the notion that has worked such diabolical havoc of a double moral standard. There can be but one standard—that of moral equality. Instead of being so painfully anxious about the 'financial prospects' of a young man, * * * it is time that we put health first and money second. * * * Let a father ask the young man, as the leading question, whether he is physically clean; insist that he shall go to his family physician, and if he gives him a clean bill of health, then his financial prospects can be gone into. But his physical self first. That much every father would do in the case of a horse or a dog that he bought with a view to mating. Yet he does less for his daughter, his own flesh and blood. Once let young men realize that such a question would be asked them by the father of the young women whom they would marry; that a physical standard would be demanded, and that knowledge would be more effective for morality among young men than all the preaching and moralizing and exhortations of the past thousand years. Thus, and thus only, can we save our daughters and their unborn children. But in no other way."

It should be stated in justice to my friend and teacher that the late Dr. J. Harry Thompson, then in charge of the Columbia Hospital for Women in Washington, as early as 1873 advocated the plan of insisting upon a clean bill of health and related to the class an instance in which the young man, after complying with what he considered a reasonable parental request, told the father: "Now that I have furnished you with evidence of my own physical cleanness, I shall insist upon a similar evidence in your case, as I am equally anxious to perpetuate the purity of my blood." To which request the father unhesitatingly acceded.

As a teacher of hygiene I can not find words strong enough in commendation of the brave editorial and the excellent article, "The Tragedy of the Marriage Altar" (by Dr. Abraham L. Wolbarst), in the "Ladies Home Journal" for September and October, 1908. The writer has realized for years the necessity of proper education, for if we expect the parents to impart information on sexual purity, they must acquire it primarily from some competent and reliable source. Few of our magazine writers have heretofore been brave enough to present this question as the "Ladies Home Journal" has done. For all these reasons I have advocated for years that hygiene should form part of the curriculum in our public schools and the question discussed from the standpoint of sexual hygiene pure and simple. Public lecturers on the purity of man commit a serious mistake, generally, when they picture the consequences of the social evil, without offering a suitable remedy. Many a young man thinks it essential to his health to give vent to his penned up secretions by sexual intercourse and to demonstrate his manhood. If deterred by fear of contracting venereal diseases, in the absence of other remedies he will most likely resort to unnatural methods.

We should make a strong plea in favor of continence, and tell our young men, that while the sexual passion is very strong, it can be accelerated or delayed, excited or lowered by the influence of the will. We should assure them that sexual indulgence is not a physiological necessity, and that nature will relieve herself by an occasional nocturnal emission. By the cultivation of pure thoughts, removal of temptation, normal mental conditions and especially by cold baths and vigorous physical exercise and avoidance of an excessive meat diet, continence may not only become possible, but easy. Those who witness the good effects of athletic sports cannot fail to appreciate that here is a good field in which to expend exuberant animal spirits and in this sense "public playgrounds" are a strong factor in the promotion of sexual purity. We can hardly go astray if we follow Dr. Parkes in advising a pure young man to make his home after the age of 22 or 23, and thus secure himself both from the temptations and expenses of bachelorhood. Dr. Howard A. Kelly believes that the Christian standard is the solution of the whole problem of chastity. I quite agree with him, provided the church makes an endeavor to combine religious and social work, and until this is accomplished we should not hide the evil because it is not a pleasant subject to talk about.

Suggestions as to what the church may do have been offered in a former report, see page 100 "Industrial Hygiene," and the desirability of social settlements in connection with schools and churches has already been emphasized in connection with the drink evil.

Among the sensible recommendations submitted by the "Committee of Fifteen" in the city of New York were, first, "strenuous efforts to prevent, in the tenement houses, the overcrowding which is the prolific source of sexual immorality. * * * Secondly, the furnishing, by public or private munificence, of purer and more elevating forms of amusements to supplant the attractions of the low dance halls, theaters and other similar places of entertainment that only serve to stimulate sensuality and to debase the taste. The pleasures of the people need to be looked after far more earnestly than has been the case hitherto. * * * Thirdly, whatever can be done to improve the material conditions of the wage-earning class, and especially of young wage-earning women, will be directly in line with the purpose which is here kept in view. It is a sad and humiliating admission to make, at the opening of the 20th century, in one of the greatest centers of civilization in the world, that in numerous instances it is not passion or corrupt inclination, but the force of actual physical want, that impels young women along the road to ruin." Referring to the question of intimate contact in tenement houses as a predisposing cause to prostitution, it is a matter of satisfaction to record that both General Sternberg and the writer realized this danger when they urged, in 1898, the adoption of model two-story apartment houses with separate entrance and exits for each family so that the sanctity of the home might be preserved.

STATE METHODS.

The question naturally arises, what can and should the State do to prevent the moral, social and physical ravages of these diseases? It must be confessed that the measures looking to the inspection and control of prostitutes are sadly inadequate. It has been suggested by German authors that the evil might be materially lessened by holding the persons who knowingly spread venereal diseases responsible for the damages. Indeed, a German Jurist goes so far as to advocate the punishment of persons who neglect to seek treatment when afflicted with sexual diseases. Apart from this the State should certainly insist upon, first, the enforcement of laws or police regulations relating to houses of ill-fame and to the sale of alcohol, particularly to minors. A closer supervision of soliciting in streets and enticing females under a fixed age. There is certainly no good reason why the terrible temptations which greet our young men and women on every street and in many public places should not be removed. A well-trained police force will have no difficulty in recognizing and banishing the solicitors, both male and female, from the streets, and in cautioning young men, especially minors, of the dangers in the red light districts.

Second. Health Boards can also recommend the enactment of laws for the prevention of syphilis, acquired in an extra genital way, by regulating the profession of barbers, chiropodists and manicurists, and requiring a special examination of wet nurses, cigarmakers, and glass blowers. Apart from the real dangers from these sources, the educational effects of such ordinances will be beneficial.

Third. Health Boards should also exert their influence towards securing adequate facilities for the treatment of indigent patients.

In Northern Europe, where venereal diseases are reportable and treatment is within the reach of all classes, these diseases, according to Weiss, have greatly diminished, but here, as Bulkley puts it, "ignored through ignorance, neglected through negligence of our duty, so ostracised and outclassed, venereal diseases, through false shame, concealment, prejudice, carry on their slaughter unhampered, unchecked and undisturbed, devastating coming generations and ruining the present one."

Fourth. Health Boards may co-operate with the Profession and Dispensaries by printing, for distribution, leaflets stating the nature of the diseases, the manner in which they are contracted and the ways in which they can be transmitted to other persons, and by the encouragement of a general educational campaign in which sexual purity, respect for women, and the possibility of physiological continence should be inculcated. The evil and far-reaching consequences of impure and unlawful gratification should be clearly pointed out.

In conclusion, a word of caution is necessary to impress upon the victims of sexual diseases the utter uselessness of securing treatment with various advertised cures. As very properly said by Mr. Samuel

Adams Hopkins in "Collier's Weekly," September 22, 1906: "All this class of practitioners are frauds and swindlers. Many of them are ex-criminals in other fields." "The Old Doctors," the "Physicians' Institutes," the "Medical Councils" and the "Quick Cures" are all equally to be shunned. Blackmail is the underlying principle of this business. These treatments can not cure; ten to one they only aggravate the disease and render it dangerous or even deadly. But once they have a man in their clutches they need not help him in order to get his money. If he demurs at their charges a threat to expose the nature of his ailment to his family or employers is enough. * * * Every advertisement of private diseases or "men's specialists" ought to be a danger signal pointing not only to wasted money, shame and misery, but often to invalidism and a dreadful form of death, where in 90 per cent of cases reputable treatment would have brought the patient through.

In some localities it is against the law to publish advertisements of this class. Pennsylvania has such a law, but it is a dead letter. St. Louis is attempting to enforce its illegal advertising ordinance and the St. Louis newspapers are fighting to save themselves the dollars tainted with unspeakable filth."

THE TOBACCO HABIT.

In view of the fact that our sociological study of 1,217 families in this city show an average annual expenditure of $12.19 for each family, which at a conservative estimate would amount to $239,655,000 for the annual tobacco bill in the United States, it is important to consider the effects of tobacco on the system.

Tobacco owes its general effects to the presence of toxic alkaloids known as nicotine, nicotianin and the "pyridin bases" which are formed during smoking. Syrian and Havana tobacco contain little or no nicotine, while the common grades contain from 3 to 4%. Nicotine is a poison which produces a local irritation of the digestive tract, nausea and diarrhea. In some instances there may be dizziness, weakness, restlessness, depressed action of the heart and convulsions. Strange enough, man becomes accustomed to these effects and may even experience an agreeable excitation of the nervous system, characterized by increased mental and physical elasticity. There is nothing to justify the assumption, however, that the use of tobacco is free from danger. Prof. Seaver's observations on Yale students appear to show that non-smokers made the best physical gains in weight, chest measure and lung capacity, and that out of every 100 of the best students only 5 were smokers, while 95 were not smokers. His data were apparently so convincing that Japan, ever ready to profit by the experience of other nations, enacted in 1900 a law prohibiting the smoking of tobacco by persons under the age of twenty—an example well worthy of emulation. Dr. A. A. Woodhull, U. S. Army, holds that cigarette smoking by the young is harmful, as it arrests the natural elimination of waste and hinders the utilization of fresh material. This explains the fact that the stature of youths who use it is less than those who do not use it.

The bad effects of tobacco may be summarized as follows: Tobacco smoke contaminates the air of rooms with coal gas and other products of combustion. According to the London "Lancet,"* one ounce of tobacco yields from one to five pints of carbon monoxide or coal gas, which, when inhaled, is a blood poison. In many instances tobacco in any form produces a chronic inflammation of the throat and stomach, which disappears after the removal of the cause. The excessive use of tobacco produces a chronic form of nicotine poisoning, with impairment of vision, nervous irritability or exhaustion, a predisposition to neuralgia and a peculiar affection of the heart, described by Professor Da Costa as the tobacco heart, characterized by irregularity of the heart sounds, accelerated action and weakness of the cardiac muscles. Chewing of tobacco is even more to be deprecated than smoking, as the injurious elements are dissolved by the saliva and not infrequently swallowed. Dr. Woodhull points out that cigarette smoking by the young develops a greater tendency to acquire an appetite for alcoholic liquors, premature puberty is induced, increasing the sexual propensity and leading to improper sexual practices. There is a consensus of opinion among educators that the use of tobacco dulls the memory and intellect. When a promising pupil in a public school begins to decline in his work it is almost certainly found that he has begun the use of cigarettes.

On the whole we may conclude that the use of tobacco is not a physiological necessity, and its abuse, like that of other nerve stimulants, is doubtless a fruitful cause of a break down. It is especially harmful in nervous subjects and those of insufficient will power properly to restrict its use. A German authority maintains, and no doubt correctly, that the danger is greater from smoking cigarettes, because of the ease with which the smoke is inhaled. In any event, the practice of inhaling the smoke into the lungs, or smoking before breakfast, is a bad one. Pipes, cigar or cigarette holders and the mouth should be kept clean. Symptoms of shortness of breath, obscure pains around the heart and nervous irritability are indications to reduce or stop the habit altogether.

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*The "Lancet," London, 1908, CLXXV.

THE ALCOHOL QUESTION.

In our sociological survey of 1,217 families in this city we found the average expenditure for alcoholic beverages to be $16.14 per annum. In view of the importance of the subject from an economic, social and sanitary point of view a study of the alcohol question seems very desirable. Before doing so it will be well to refer briefly to different alcoholic beverages in most common use.

FERMENTED LIQUORS (WINE).—Among the oldest and best-known of alcoholic beverages is wine, which is obtained from the fermented juice of grapes. The juice contains water, proteids, grape sugar, levulose, inosit, pectins, tartaric and malic acids and their salts, also small quantities of mineral salts (sulphates and chlorides), coloring matter and tannic acid. In off years malic acid predominates and there is a deficiency of sugar. The quality of the juice and the resulting wines depend upon the character of the grape (soil, climate, ripening process), and many other factors in the preparation of the must.

If a white wine is desired the skins and stems of the grape are removed, while for colored wines they are permitted to remain, the blue and yellow pigments during fermentation and under the influence of free acids turn red.

Fermentation of the grape juice is usually carried on at a temperature between 60 and 75 degrees F. and is the result of a natural ferment or yeast plant found on the skin of the grape. During fermentation the proteids in the must are to a great extent used up in the formation of yeast cells and the grape sugar and part of the levulose are split up into alcohol and carbonic acid. The inosite remains unchanged, the pectous matter is changed and a portion of the salts are precipitated in the form of cream of tartar. In addition, glycerin and various aromatic ethers, which impart to the wine its flavor, and small quantities of the higher alcohols and free organic acids are formed. The resulting wine may be said to contain, apart from water, alcohol and carbonic acid, also small quantities of proteids, inosite, free malic, tartaric and succinic acid, salts, glycerin and aromatic ethers, and in the case of grapes fermented with their skins also tannic acid and coloring matter.

The lighter wines of this and other countries, viz: the Bordeaux, Burgundies, Rhine and Moselle wines, Hock, Sauternes, Clarets and Champagnes usually contain from 9 to 15 per cent of alcohol by volume. The fortified or stronger wines like Port, Sherry, Tokay, etc., contain from 16 to 27 per cent of alcohol. The amount of sugar varies from 0 in dry wines to 26 per cent in the sweet wines. The natural wines contain little or no carbonic acid, as most of it escapes during fermentation. The effervescent wines like Champagne are the product of a second fermentation in the bottle, sugar and flavoring extracts having been added for the purpose.

The dietetic effects of wine depend entirely upon the amount of alcohol present. Dry wines usually promote peristaltic action and act upon the kidneys, the red wines commonly retard the movements of the bowels, which is due to the astringent effects of tannin.

Cheap wines are frequently made from other fruits and even the natural wines have been subject to various forms of adulteration, such as the addition of sugar, glycerin, various ethers, logwood and other coloring agents, like malvey leaves, red beets, carmine, fuchsin and other analin colors.

Unfortunately the manufacture of artificial wines appears to be everywhere extending. Some years ago Petiot considered it perfectly legitimate to extract repeatedly the skin and seeds of grapes with a solution of sugar, which was then permitted to undergo the usual fermentation, the percentage of alcohol varying with the amount of sugar present. Harrington informs us that an artificial wine known as "piquette," and of which over 50,000,000 gallons were made in France in 1898, is made as follows: "To each gallon of water used are added one pound of raisins and one of dried apples, the mixture is placed in an open vessel and allowed to stand three days. It is then bottled with a ½ teaspoonful of sugar and a small piece of cinnamon in each bottle. It is said to be "a pleasant and harmless beverage." Indeed, so serious and widespread has become the manufacture of artificial wine in France that the wine growers in 1907 revolted and demanded adequate legislative protection. Harrington and Wiley furnish other examples of the methods followed by those engaged in this nefarious trade. "*Port*—Cider, 30 gallons; alcohol, 5 gallons; sirup, 4 gallons; Kino, ½ lb.; tartaric acid, ¼ lb.; port wine flavor, 6 ounces. *White wine*—Dissolve 25 lbs. of grape sugar and one of tartaric acid in 25 quarts of hot water, add 75 quarts of cold water and 50 pounds of graps pulp, stir, cover, let ferment for 4 or 5 days and strain. *Claret*—California hock, 40 gallons; extract of Kino, 8 ounces; essence of malvey flower, 8 ounces." These samples are given to show how easy it is to deceive the average customer, who often pays a high price for beverages assumed to possess food values or medicinal properties.

FRUIT WINES.—Home made wines are often made from the fermented juice of apples, pears, currants, gooseberries and oranges, they contain pretty much the same ingredients, except inosite, as grape wine, the percentage of alcohol is, however, less, on account of the deficiency of sugar, unless sugar has been added, which is often done.

Apple or pear cider usually contains from 4½ to 6 per cent of alcohol. According to Parkes such wines are sometimes manufactured or stored in earthenware vessels, coated inside with litharge glaze, which readily gives up large quantities of lead to acid liquids and is thus productive of lead poisoning. If the air is not absolutely excluded from all kinds of wine acetous fermentation ensues, and the liquid is transformed into vinegar. The effects of home made wines are moderately stimulating, and slightly laxative and diuretic on account of the free organic acids contained therein. It is also held that their habitual use favors the formation of gravel and stone in the bladder and chronic inflammation of the urinary passages.

BEERS.—*Beer* is a very ancient beverage, having been used by the Egyptians over 2,000 years ago. It was introduced into Germany during the 12th century and for a long time the art of brewing was largely confined to the cloistered monks. Pure beer is manufactured from malt, hops and water. In the first place, clean barley is steeped in hard water and is then allowed to sprout in heaps, which are spread out when the germination has reached the requisite stage. During this process diastase develops which converts the starch into dextrin and maltose, and the insoluble albuminous matter is rendered soluble. Further germination is prevented by first drying and then parching the malt at a temperature of 125 to 180 degrees; this also develops color and flavor. The malt is then screened for the removal of the sprouts and, after being crushed, is steeped in water at a temperature of 160 degrees F., which has the effect of converting the balance of starch in the wort into maltose. The resulting infusion, after the addition of hops, is now boiled for a couple of hours, during which about 1/3 of the bitter principles of the hops are taken up, the coagulable proteids are separated and all existing micro-organisms are destroyed. The decoction is then rapidly cooled in tanks and transferred into vats, where, after the addition of yeast, it is allowed to ferment at a temperature of 60 to 66 degrees F.; during this process the maltose is split up into alcohol and carbonic acid. When fermentation has gone far enough the yeast is removed and the beer is run into casks. Good beer, apart from alcohol, carbonic acid, glycerin, succinic acid, also contains some proteids, sugar, malt extracts, salts and bitter principles. The percentage of alcohol varies from 3 per cent in the lighter kinds to 6 or 7 per cent in ale and porter. In the 28 specimens examined by Mr. C. A. Crampton, of the Internal Revenue Office, the amount of alcohol averaged 4.63 per cent by weight or 5.79 per cent by volume.

The so-called "Weiss beer" is made from a mixture of barley and wheat malt and usually contains more carbonic acid and yeast particles and less alcohol than ordinary beer. Porter, ale and Bock beer are made from a stronger wort and hence contain more alcohol. The chemical analysis shows that beer is not only a beverage, but also a food stuff, because 2 liters of beer contain about 10 grams of proteids and 100 grams of carbohydrates or nearly 1/10 of the protein ration, and 1/5 of the daily requirements of carbohydrates.

In recent years beer has been known to be adulterated by the employment of glucose and invert sugars obtained by the action of dilute sulphuric acid upon rice and corn.

This sophistication affects not only the nutritive value of the beer by a deficiency of the proteids, but may also be a source of arsenical poisoning, if the sulphuric acid happens to be derived from arsenical pyrites. Such an instance occurred in 1900 at Manchester and Salford in the northwest of England, where over 3,000 consumers of beer developed symptoms of arsenical poisoning, such as paralysis and wasting of certain muscles, functional disturbances of certain sensory nerves, with 36 fatal cases from peripheral neuritis. Specimens of the glucose showed from 0.02 to 0.05 per cent of arsenious oxide and the beers made from it contained from 0.10 to 1.50 grains of arsenic per gallon. It is gratifying to note that adulterated beer is quite uncommon in this country, as none of the 476 samples examined in the State of New York contained hop substitutes. The effects of beer and wine depend upon their purity, the quantity consumed, and the susceptibility of the individual. Quite a number of authors believe that these beverages, consumed in moderation, say from ¼ to ½ liter of wine or from ½ to 1 liter of beer during 24 hours, in otherwise normal persons, will have no injurious effects, and may even possess certain advantages, such as aiding digestion, by promoting the flow of digestive juices, while the bitter principles of hops possess certain tonic properties. On the other hand Buchner, Ogata and others claim that beer retards digestion and all agree that, if taken habitually in excess, both beer and wine, in the language of Parkes, "lead to the storage up of superfluous fat in the tissues, and they interfere with the proper elimination of effete matter; imperfect oxidation leads to an excessive formation of uric acid, and the plethoric and gouty habit are produced, eventually tending to palpable disease."

BRANDY.—Brandy, the strongest alcoholic drink, is derived from the distillation of wine, but as commonly sold it is for the most part a mixture "of varying amounts of spirits from the distillation of corn grain spirits, etc." Apart from water it contains 55 to 65 per cent of alcohol by volume, or 39 to 47 per cent by weight, in which are held aromatic ethers, also traces of tannin, coloring matter and various secondary products, including aldehydes, furfural and higher alcohols. Harrington gives a number of examples showing how fictitious brandy is made, of which the following is reproduced: "Boil 5 ounces of raisins and 6 of St. John's bread in water, filter and make up to 10 quarts, mix this with 20 quarts of alcohol, ½ ounce of essence of violet flowers and 10 ounces of brandy essence."

RUM.—Rum is distilled from fermented molasses and arrack from fermented rice or cocoa nuts; they contain from 55 to 65 per cent of alcohol by volume and more or less of the objectionable fusel oil and, like other strong drink, are frequently adulterated.

WHISKEY.—Whiskey is made by distillation of malted grain, especially rye, corn and wheat, although barley, oats and potatoes are sometimes used. The mash for Scotch whiskey consists of two parts of malt, 7 of barley and 1 each of oats and rye; the mash for Irish whiskey is the same with the exception of the rye; the peculiar smoky taste of these whiskeys is due to the creosote products evolved in peat and turf fires over which the malt is dried. Good Bourbon whiskey has an agreeable flavor, the mash being a mixture of corn and rye. All new whiskeys, in addition to about 45% of ethylic alcohol, contain amylic alcohol or fusel oil and other impure alcohols. These impurities are very irritating to the mucous membranes of the throat and stomach and produce rapid intoxication; the fusel oil is also responsible for the headache, nausea and general depression so often observed after the consumption of impure liquors. The amount of toxicity of the fusel oil depends upon the character of the raw material, it being greatest when derived from potatoes and least when obtained from grapes. The aldehydes can be removed by redistillation and the fusel oil by charcoal or a fractionating patent still. The fine spirit secured by rectification contains from 72 to 90% of absolute alcohol and only traces of the impurities referred to, while ordinary whiskey contains from 35 to 50% by volume of alcohol and almost always some of the toxic principles. It is a familiar but true saying that whiskey improves with age in taste and flavor. This is due to the fact that the constituents of fusel oil are converted into non-toxic aromatic ethers which impart the agreeable flavor to aged whiskeys and brandies and also constitute, with other compounds, the bouquet in differ-

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ent wines. The new and cheap grades of whiskey are decidedly injurious to health and when fusel oil is present to the extent of 1 part per 1,000 it is unfit for use.

There is abundant evidence to show that whiskey is frequently manufactured from alcohol, water and various flavoring compounds, of which the following example is given by Harrington:

Scotch Whiskey.—"Alcohol, 46 gallons; genuine Scotch, 8 gallons; water, 18 gallons; ale, 1 gallon; cresote, 5 drops in 2 ounces of acetic acid; pelargonic ether, 1 ounce; honey, 3 pounds."

The writer fears that in the manufacture of fictitious whiskeys methyl or wood alcohol is also used on account of its cheapness; this, when employed as an intoxicant, has been known to produce total blindness.

THE NATION'S DRINK BILL.*

"As the nation grows in population and wealth, so does its expenditures for stimulating beverages. This is the more surprising in view of the warfare waged against the saloon and the milder beverages. The per capita consumption of spirituous liquors for the year ending June 30, 1907, is the highest on record, reaching 23.53 gallons per capita, an increase over 1906 of 1.27 gallons.

The advance in the consumption of distilled spirits from 1.52 gallons per capita in 1906 to 1.63 gallons in 1907 is more notable than an increase of .12 gallons in the use of wine and a rise of 1.04 gallons in beer.

The year was one of phenomenal prosperity, and this may account for the increase in expenditure for stimulants, which was quite as marked for coffee and cocoa as for alcoholic drinks. The use of tea seems to have declined considerably, as it falls below the yearly average for five years.

A gain of 1,600,806 in population will not account for the increased use of stimulating beverages. Possibly extensive advertising is responsible for no small share of the increase, which seemingly goes forward in spite of all efforts to check the sale of intoxicating beverages and to kill the demand for coffee. "There's a reason," but it baffles solution. There are many theories or opinions, but the finding of a reasonable check to the use of spirituous beverages seems as far away as ever. Legislation does not seem to curb the curse of drink.

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*This article appeared in the "American Grocer," May 27th, 1908, and is reproduced by permission of the editor.

RETAIL COST OF ALL BEVERAGES.

The various estimates of cost, presented by the *American Grocer,* compiled, so far as quantity is concerned, from the report of the U. S. Bureau of Statistics, shows that the average annual cost of alcoholic and non-alcoholic stimulants, in the United States, 1905-07, was as follows:

Alcoholic drinks		$1,466,584,327
Non-alcoholic stimulants—		
Coffee	$161,598,437	
Tea	41,902,680	
Cocoa	10,000,000	213,501,117
Total, 1907		$1,698,085,444
Total, 1906		1,660,489,520
Total, 1905		1,548,708,307
Total, 1904		1,498,622,715
Total, 1903		1,451,633,379
Total drink bill, five years, 1903-1907		7,857,548,365
Average annual drink bill, 1903-1907		1,571,509,673

The above represents a per capita expenditure for beverages in 1907 of $19.74 for the 85,817,239 inhabitants of the United States, or $98.70 for each family of five. Yearly average for five years, $19.00, or $95.00 per family.

The quantities of the four leading beverages consumed annually for three years, 1905-07, as estimated by the "American Grocer," were as follows:

	Gallons.
Beer	1,686,667,659
Coffee	1,615,984,370
Tea	558,500,000
Spirits and wines	156,029,818

PER CAPITA CONSUMPTION ALCOHOLIC DRINKS.

The following table shows the annual per capita consumption of liquors in the United States for ten years:

Year ending June 30:	Spirits.	Wines.	Beer.	Total
1898	1.12	.28	15.96	17.36
1899	1.18	.35	15.28	16.81
1900	1.28	.39	16.01	17.68
1901	1.33	.37	16.20	17.90
1902	1.36	.63	17.49	19.48
1903	1.46	.48	18.04	19.98
1904	1.48	.53	18.28	20.35
1905	1.45	.42	18.50	20.38
1906	1.52	.55	20.19	22.26
1907	1.63	.67	21.23	23.53

TOTAL ALCOHOLIC DRINK BILL.

Bringing together the quantities of liquors consumed, estimated at the retail cost, on the basis of previous reports, it is shown that the American people spent for alcoholic stimulants for the year ending June 30, 1907:

Beer	$843,333,829
Whiskey (exclusive of quantity used in arts)	118,456,091
Grand total 1907, est. cost	$1,466,544,327
Grand total 1906, est. cost	1,450,855,448
Grand total 1905, est. cost	1,325,439,074
Grand total 1904, est. cost	1,277,727,190
Grand total 1903, est. cost	1,242,943,118
Grand total 1902, est. cost	1,172,565,235
Grand total 1901, est. cost	1,094,644,155
Grand total 1900, est. cost	1,059,563,787
Grand total 1899, est. cost	973,589,080

LIQUOR AND TOBACCO TAX.

The total revenue of the United States Government in 1907 from spirituous and malt liquors, and from tobacco, the ally of liquor, was $247,458,911, or $2.88 per capita, equal to $14.40 tax on every family.

CONCLUSION.

We must leave to students of social economy the question of a great nation spending an average of over one and one-half billions annually for stimulating beverages; a sum about as great as the appropriations of the Congress for a session. Nearly double as much per capita is spent for drink as is spent for the maintenance of public schools. It nearly equals the value of exports of merchandise per capita. It is double the amount of the public debt. It is more than the farm value of the corn crop, which exceeds 2,500 million bushels; three times the value of the wheat grown; more than double the worth of the cotton crop. The indirect cost is beyond estimate, and so great is the waste and misery created that States are fighting the evil and endeavoring to banish the saloon as a distributing factor. It is easily the foremost question of the day, and places the support of a big navy or an army in the shade."

ALCOHOL AS A FOOD STUFF.

Professor Liebig was perhaps the first to declare that alcohol stands only second to fat as a respiratory material, but wisely added that the same effect could be produced in the body by means of saccharine and farinaceous articles of food at one-fourth or one-fifth the cost.

Professor Atwater, in order to determine the food value of alcohol, substituted for a portion of the non-nitrogenous food a quantity of ethyl alcohol equivalent in energy to the food which it replaced—2½ ounces of absolute alcohol per day in six doses—and found what had been taught in fact by Liebig: 1. Extremely little of the alcohol was given off from the body unconsumed in the breath or otherwise. The alcohol was oxidized, i. e., burned as completely as bread, meat and other ordinary foods in the body and in the same way. 2. In the oxidation all of the potential energy of the alcohol was transformed into heat or muscular energy. In other words, the body transformed the energy of the alcohol just as it did that of sugar, starch and fat. That is, whether the body was at rest or at work, it held its own just as well when alcohol formed a part of the diet as it did with a diet without alcohol.

These experiments clearly demonstrate the food value of alcohol, but Atwater wisely adds that it should be remembered that the physiological action of alcohol involves much besides its nutritive effect. Its influence on the circulatory and nervous functions is especially important. He also said: "Whether alcohol is to be called a food or not depends upon the definition of the food." The writer does not question the scientific deductions made from these experiments, but objects that alcohol should be considered anything else than an accessory, to be used with extreme precautions. Prof. Atwater has told us, in one of his excellent Bulletins, that "the most healthful food is that which is best fitted to the wants of the user; the cheapest food is that which furnishes the largest amount of nutriment at the least cost, and the best food is that which is both healthful and cheapest."

PHYSIOLOGICAL EFFECTS OF ALCOHOL.

Absolute alcohol, on account of its affinity for water, exerts a caustic effect on the mucous membranes. When properly diluted, it is rapidly absorbed and speedily oxidized. It is a stimulant to the central nervous system and the sympatheticus of the heart, and produces a feeling of exhilaration, vivacity of the mind, accelerated pulse and increased muscular activity. Bunge denies these properties, and claims that its primary action is that of a depressant, and that its apparent good effects are simply due to the obtusing influence upon physical and mental suffering. But this is scarcely a correct assumption, as there are individuals in whom the smallest doses produce palpitation of the heart, throbbing of the carotids, and great mental activity. He also claims that alcohol does not produce renewed vigor in tired individuals, but simply obtuses the feeling of exhaustion. Dr. Henry Smith Williams, discussing the relation of alcohol to muscular work, states that alcohol does not increase the capacity to do muscular work, but distinctly decreases it. ("McClure's Magazine," October, 1908.) Atwater's experiments conclusively show that in the oxidation of alcohol in the system all the potential energy is transformed into heat or muscular energy; and there is certainly reason for believing that it is also a stimulant. How else can we explain the action of brandy in cases of heart failure? It would be absurd to talk here of an obtusing or stupefying effect. It is a stimulant which, like other agents of this class, is followed by a stage of depression.

Alcohol, in moderate and diluted doses, evidently stimulates digestion, as shown by its beneficial effects after a hearty meal; but large quantities interfere with or arrest the peptonizing process, and frequently produce acute gastric catarrh. These effects are liable to be observed, when present, to the extent of 10 per cent of the gastric contents. Alcohol also exerts a marked diuretic effect which is believed to be due to a direct irritation of the renal epithelium.

Pathological Effects of Alcohol.

The habitual use of immoderate doses of alcohol cannot fail to produce serious injury to mind and body. One of the most constant effects is chronic inflammation of the stomach, with consequent impaired digestion and nutrition. It produces fatty degeneration of the heart, liver and arterial coats, a most common cause of apoplexy, probably because it promotes the conversion of albuminoid tissues into fats. The connective tissues of the body increase in amount and their subsequent contraction gives rise to cirrhosis (hardening of the liver), Bright's disease and chronic meningitis. It is one of the most fruitful causes of insanity and affections of the nervous system—like inflammation of the nerves, palsies, epilepsy, etc. Dr. Macatee's investigation shows that during the past 9 years 9,510 patients were treated for alcoholism and 409 for delirium tremens in the City Hospitals of Washington, the majority of the patients at public expense.

It is a lamentable fact that while the mortality from the so-called preventable diseases in the United States has markedly declined in the last two decades, the death-rate from Bright's disease, heart disease, dropsy, apoplexy and pneumonia are apparently greater than in 1890. For reasons just stated we may well pause to inquire whether our ever-increasing "National Drink Bill," may not be a factor in the undue prevalence of these diseases, as also in the increase of insanity and nervous disorders.

ALCOHOL INCREASES THE SUSCEPTIBILITY TO DISEASE.

Professor Hodge, of Clark University, in 1895 demonstrated the injurious effects of alcohol upon dogs. The more recent experiments of Taavlaitmen, cited by Babcock,[†] apparently show that in dogs, rabbits, guinea pigs, fowls and pigeons alcohol distinctly increases the susceptibility to experimental infection; and that the abnormal temperature of experimental diseases persists longer than in infected animals that do not receive the drug. Dr. Reid Hunt, of the Public Health and Marine Hospital Service, in 1906 conducted a similar line of experiments and arrived at the same conclusion. Metchnikoff[‡] attributes this to the fact that alcohol lowers the resistance of the white corpuscles of the blood, which are the natural defenders of the body.

Lanceraux has shown that in 2,192 cases of tuberculosis studied by him over one-half were confirmed drunkards, and Guttstadt's Statistics[*] also indicate that consumption is especially common among bartenders and brewers. Indeed, every physician knows that alcohol not only predisposes to tuberculosis, pneumonia, typhoid fever and other infectious diseases, but also that these diseases are more fatal or run a more severe course in alcoholic subjects—probably because of the impaired digestive functions and a general depraved nutrition of the system, with consequent diminished power of resistance. Apart from the diseases already referred to, alcohol also increases the tendency to rheumatism and gout, and according to Babcock "there is a distinct relationship between the incidence of alcoholism, insanity, venery and crime."

EFFECTS OF ALCOHOL UPON LONGEVITY.

The following figures, taken from Dr. Ogle's Report (45th Annual Report of the Registrar-General of England), show the effect of intemperate habits in shortening life:

COMPARATIVE MORTALITY OF MALES 25 TO 65 YEARS OF AGE.

All Causes Complete.	All Males, England and Wales.	Brewers.	Inkeepers, Publicans, Spirit, Wine or Beer Dealers.
Mortality figure	1000	1361	1521
Diseases of the nervous system	119	144	200
Respiratory system	182	236	217
Urinary system	41	55	83
Liver	39	96	240
Alcoholism	10	25	55
Gout	3	9	13

[†] Preventive Medicine, p. 83.
[‡] The New Hygiene, p. 25.
[*] Klin. Jahrbuch f. 1904.

Life Insurance Tables based upon English Statistics cited by Jewett (Town & City, p. 87):

Age.	Average Expectation of Life.	Moderate Drinkers.	Total abstainers.
At 20 expect to live to be	62	35	64
At 30 expect to live to be	65	43¾	66½
At 40 expect to live to be	68	51½	68

EFFECTS OF ALCOHOL UPON MENTAL AND MORAL FACULTIES.

Perhaps one of the most deplorable effects of alcohol is that it produces structural changes of the cells of the brain and spinal cord—a fruitful cause of insanity—and leads to a mental and moral deterioration, characterized by the loss of will power, blunted moral sensibilities and the ruin of character; and, saddest of all, these effects are often transmitted through vulnerable anatomical elements to the offspring.

A curious record has been compiled by Professor Pellman of the University of Bonn. It relates to the career of a notorious drunkard who was born in 1740 and died in 1800. In investigating her history her descendants were found to have numbered 834, of whom 709 have been traced from their youth. Of these, 7 were convicted of murder, 76 of other crimes, 142 were professional beggars, 64 lived on charity and 181 women of the family led disreputable lives. Further inquiry, moreover, showed that the family cost the German Government for maintenance and costs in the courts, almshouses and prisons, no less than $1,250,000—in other words, just a fraction under $1,500 each. It would probably be difficult to find a more remarkable example than this of the evil effects of the drink habit and the transmission of hereditary defects.

The statistics of the Elmira Reformatory for 1900 show that 3,363 of the 9,344 convicts had drunken ancestors and the records of every police court reveal the startling fact that about 60% of all sentences are imposed for drink. 91 of the 175 prisoners examined by Dr. Paul B. Johnson in the Washington Workhouse were sentenced for drunkenness and disorderly conduct, and 171 admitted the use of alcohol, most of them to excess. Mr. Boies estimates that the share of alcohol in the expense of crime in the United States is $4.34 per capita or over 420,000,000 per annum (Jewett, p. 24-25).

Professor Demme's statistics of 10 temperate and 10 intemperate families, based upon 10 years' study and observation, are also of interest:

	Temperance families.	Drunkards' families.
Number of children	61	57
Died before six weeks old	5	25
Idiots	0	6
Stunted in growth	0	5
Epilepsy	0	5
Nervous in childhood but cured	6	0
Ordinary good health in childhood	81.5%	17.5%

Moreover, Von Bunge has shown that the daughters of alcoholic fathers in the third generation are usually unable to nurse their offsprings.

ALCOHOL AS A CAUSE OF ACCIDENTS.

Considerable evidence might be adduced to show the relationship of alcohol to railroad and other accidents. Those who are familiar with the effects of intoxicants need no argument in favor of sobriety. All business men and railroad corporations realize the value of sober habits among their employees, and quite a number insist upon total abstinence at all times, whether on or off duty.

On the whole we may conclude that, for persons in health, alcohol in any form presents no advantages not found in other food stuffs or stimulants, and which are, moreover, comparatively free from the dangers attending its use. Indeed the subsequent depressing effects, and the baneful influence of its misuse, should make us careful in the employment of alcohol, even for medicinal purposes, especially when rest, proper food, and some of the beverages and stimulants like coffee, tea or beef tea may accomplish the same object.

CAUSES OF INTEMPERANCE.

The writer has watched with satisfaction the physical development of the population of the United States, which has more than justified the opinion, long since expressed by scientists, that a mixture of the blood of different nations of the same race is better than either of the parent stock. Our typical American is a very different type from his English, French, Irish or German ancestor. As a result of a commingling of the blood, he has developed into an individual of strikingly superior physical and intellectual qualities, destined to play a very important role in the affairs of the world. And yet one of the dangers which appears to threaten us is the growing evil of intemperance, which is intimately connected with our mode of life. In a general way, there is no class of men more ambitious, more industrious and more fond of accumulating wealth than our people.

The very excellence of our progress and its accelerated speed have quickened the pulse, stimulated the nerves and intellect and fired the ambition of men until they overleap the limits of their natural powers. Under this high-pressure system the rich and poor alike strain their physical and mental energies. Rest and recreation seem impossible to many and the temporary stimulant derived from the tempting cup offers, for the time being, relief to our physical and mental exhaustion. It is, however, a dangerous remedy. It is like the whip applied to the tired horse and the result is generally bad.

Professor Kraeplin, one of the foremost experts on insanity in Europe, in his monograph on "Alcohol and Youth," in discussing the causes which lead up to the drink habit, says: "The blacksmith offers as an excuse exposure to heat, the liveryman pleads exposure to cold, masons and bricklayers plead outdoor exposure, the miller blames the dust, the sailor the fog, another his wife and still others business reverses." From this he concludes that the very diversity of causes assigned show that none of them will stand the test of scrutiny. Mr. Wurm, in a very interesting address on the alcohol question, delivered at Essen, September 20th, 1907, takes issue with Kraeplin and proceeds to present some of the causes which operate in the drink habit among wage-earners. The writer quite agrees with him that the dust-producing occupations are at least predisposing factors, especially when the employer makes no attempt to furnish pure water or non-alcoholic beverages to allay the thirst and when the rules and regulations for the prevention and removal of dust are totally ignored. In like manner he makes a strong plea for the operatives exposed to extremes of high temperature, the inhalation of injurious and offensive gases, and very properly insists that the causes of abnormal thirst should primarily be prevented by efficient and copious ventilation. He attributes, and we believe correctly, the drink habit so prevalent among painters to the fact that they resort most unwisely, upon the appearance of the first symptoms of lead colic, to alcoholic beverages to allay their suffering, when, as a matter of fact, the most rational preventive measure would be to abolish the use of lead pigments altogether. He describes, graphically, the exposure of quarrymen, stone-cutters, masons, bricklayers, joiners, teamsters, motormen, etc., to the elements, and points out that the men engaged in construction work are rarely supplied with a shack and a cook stove where they can warm up and take their noonday meal. In the absence of suitable conveniences the workmen are compelled to frequent the saloons, and here highly seasoned titbits promote thirst, while the social element is also conducive to excesses. All of these evil conditions are very much aggravated in this country by the pernicious system of treating. This abominable custom can not be too strongly condemned as it is almost as vicious as the seduction of a young man to take his first drink. Many a young man has fallen a victim to the habit by the encouragement of his older companions to "be a man and take a drink."

Among the causes stated by 171 of the prisoners in the Washington Workhouse investigated by Dr. Paul B. Johnson, we find the following: Bad companions, dusty employments, long hours of work, especially at night, exposure to cold and wet, work in hotels and bottling establishments. Given toddy, beer, etc., as children four years old and upwards. Death of relatives and troubles.

Mr. Wurm considers the effects of mental and bodily fatigue as a cause of intemperance and emphasizes the peculiar effects of mental strain combined with monotonous machine work, in which, after all, constant attention is demanded to prevent accidents and spoiled products. Mr. Emmet L. Adams, Master of the American Machinists, also believes that the monotony of machine work, especially when combined, as in the Naval Gun Shops, with strict orders not to converse during the work, is conducive to mental fatigue and emptiness, which the wage-earner seeks to counteract by the use of alcoholic beverages. In his opinion long hours, dirty work and low wages are fruitful causes of discontent and intemperance.

Poverty and Drink.

Referring to the effects of low wages as a cause of intemperance Mr. Wurm quotes Professor Justus von Liebig, who in 1860 declared "Alcoholism is not the cause but the result of distress. It is the exception to the rule for a well-nourished individual to become a drunkard. When, on the other hand, a man's earnings are insufficient to provide the quantity and quality of food required for the restoration of his working capacity, sheer necessity compels him to have recourse to alcohol." It will be remembered that Liebig was the first to demonstrate the food value of alcohol, and this view may have been justified at a time when wages in Germany were extremely low, and the cost of whiskey so nominal as to be classified as one of the most inexpensive articles of food. Wurm also quotes Friedrich Engel, who appears to have been aware of the fact that the social conditions, as observed by him in England in 1845, are not only a cause of alcoholism, but that the drink habit is also very often the primary cause of the low standards of living.

Engel says: "Seduction and every possible temptation combine to produce the drink habit. Ardent spirits at present constitute the workingman's only source of pleasure. He returns weary and exhausted from his work to a damp, gloomy and unattractive home, devoid of all the ordinary comforts of life. He is sadly in need of good cheer and encouragement; his body weakened by improper food and exposure to bad air demands some form of stimulant. He wants to meet his friends and resorts to the saloon as the only place to gratify his longings. Under such circumstances drunkenness ceases to be a vice."

We have, on the other hand, the opinion of John Burns, the English Statesman, himself a former wage-earner, who, in his lecture on "Labor and Drink," p. 5, declares: "Drinking is bad enough in the prosperous, well-fed and comfortable classes, who can mitigate its heavy drain upon their health, strength and resources by rest, change and counter-attractions. But on the poor it is an additional load, piled upon their own backs, too often by their own hands, and nearly always at the time they are least able to bear it. From their strength as a class, from their powers of endurance as individuals, and from their capacity as craftsmen, it is a never-ending drain."

On page 12, in speaking of "Poverty and Drink," he says: "The theory, dogmatically asserted, that poverty causes drink is rudely shaken by the fact that the drink expenditure per middle and upper class family who have the means, is two and a half times greater than that of the working class family, although the effect is less apparent. But the strongest answer is the statistical fact that as wages rise general drunkenness follows, insanity increases and criminal disorder due to drink keeps pace with all three. The converse generally holds good, for in rural districts, where wages are low, drunkenness is lower, and insanity due to drink is scarcer. In support of these views and tables, the Prison Commissioners' report (p. 16, Judicial Statistics, 1899): 'A year of great prosperity, 1899 was also a year of great drunkenness.' Yet drunkenness in 1899, I am pleased to say, per 100,000, was much lower than in previous periods of prosperity, as for instance in 1884; the year 1875, our busiest year, was the most drunken of any recorded.

"It may be urged, in extenuation of these deplorable facts, that the determining cause was the previously low wages; also that it is the sudden rise from rural to urban wages that sweeps the appreciated wage-earner from his simple, sober ways, to exciting, heavy drinking habits. If this be accepted, it diminishes enormously the force of the theory that poverty causes drink. * * *

"Industrial prosperity is always the measure of wages, generally the standard of drunkenness, the gauge of insanity, and too often the stimulus of crime. This is strikingly confirmed by that patient, devoted and capable investigator, Mr. W. D. Morrison: 'A glance at the criminal returns for a series of years will at once show that crime is highest in summer and autumn—a time when occupation of all kinds, and especially for the poorest members of the community, is most easily obtained—and lowest in winter and spring, when economic conditions are adverse.' All these facts, instead of pointing to poverty as the main cause of drunkenness, point the other way."

Wurm stoutly maintains that in Germany higher wages have created a greater demand for the less harmful but more expensive beverages, like wine and beer, and quotes from the "Volkstimme" of Frankfurt that in all trades where there has been a reduction in the working hours alcoholism has diminished, because the men have an opportunity to enjoy nobler pursuits than to sit around in common saloons."

Justice De Lacy, of the Juvenile Court of Washington, informed the writer that quite a large number of deserted wives, pleading for compulsory support, declare that when their husbands earned from $2.50 to $3.50 a day they led exemplary lives, but now when they are earning from $4.00 to $5.00 a day a number of days are lost in idleness by the drink habit.

The writer does not pretend to offer an authoritative view and prefers to adduce the evidence on both sides of the question. He is strongly inclined to the belief, amounting to a conviction, that the subject is so broad and the evil effects so far reaching as to deserve a systematic and exhaustive study by a Special Commission.

Reference has been made in a former report to the fact that malnutrition, whether the result of insufficient or improperly prepared food, or the consumption of cold victuals, is a very fruitful cause of intemperance. In our sociological study of 1,217 families it was found that 750 wage-earners carried dinner pails and 205 were reported as being accustomed to consume alcoholic beverages with their meals. The number in each case was greater among the white than the colored wage-earners. Everyone at all familiar with the subject knows that badly cooked food, especially when consumed from the "cold dinner pail," produces derangements of the stomach and a craving for alcoholic stimulants which in turn aggravate the original gastric disturbance and readily lead to the drink habit.

In addition to the causes mentioned, the unnecessary number of saloons, not infrequently connected with employment agencies or located in the vicinity of workshops, wharfs and the homes of wage-earners increase the temptation. Last but not least the characteristic American bar—drinks being consumed in rapid succession, aided by the pernicious system of treating—is a very fruitful cause of the drink habit.

Remedial Measures.

The remedy is difficult to suggest. Prohibition does not prohibit and all such attempts are repugnant to the masses and lead to the substitution of even greater evils, such as the drug and other morbid habits. In Dr. Johnson's investigation quite a number of the prisoners admitted that when unable to secure liquor they have resorted to alcohol diluted with water, hot water and sugar, soda water, sarsaparilla, etc. Wood alcohol was stated to be used in the U. S. Navy, obtained from shellac varnish stolen from the paint room, the shellac being precipitated by water and the fluid poured off and mixed with hot water and sugar. The following substitutes for liquor were also alluded to: Duffy's Malt Whiskey, Johann Hoff's Malt Extract, Jamaica Ginger, Peruna, S. S. S., renewed prescriptions and forged prescriptions. During my Army experience at posts situated within the heart of an Indian country and where it was impracticable to establish grog shops within a reasonable distance, whiskey was brought into the garrison through the mail in various disguises, or in express packages and peddled in two ounce vials by the soldiers themselves. Others resorted to the purchase of essence of ginger, lemon, vanilla, bay rum, alcohol, patent and proprietary remedies containing alcohol in various percentages—hence even the most favorable environment failed to prohibit. It was not until the establishment of the canteen system that better conditions were offered. It was the creation of the Soldiers' Club with the sale of light wines, beers and non-alcoholic beverages which reduced drinking to a minimum and promoted not only temperance and contentment but also lessened immorality and crime.

In spite of the fact that beer and wine drinking, viewed in the abstract, is unproductive of good, quite a number of friends of temperance believe that saloons dispensing light wines and beers should pay a very much lower license tax than those selling stronger alcoholic beverages. They also deprecate the tendency to suppress the sale of beer by the quart, because it is found that the men, instead of "rushing the growler," will purchase whiskey by the pint or quart with infinitely more harmful effects.

So long as human nature is weak, and the masses are not properly educated, the substitution of a lesser evil is not only justifiable but will, in the future as it has in the past, prevent excesses which are fatal to soul and body. At present every effort towards total abstinence merely opposes theory to facts and sentiment to statistics.

While it is true that nearly one-half of the population of the United States is now living under prohibition liquor laws and nine States have prohibition outright, there is no marked diminution in the consumption of alcoholic beverages. One of the immediate effects has been an appalling increase in the number of drug stores in "dry States." The subject was deemed of sufficient importance by Mr. Harry B. Mason, Editor of the "Bulletin of Pharmacy," to bring it to the attention of the American Pharmaceutical Association at a meeting held at Hot Springs, September 6th, 1908.

Mr. Mason said in part: "We are facing a great world-movement. It has been instituted by society for the protection and maintenance of its own interests. It will continue its onward development whether we like it or not, and as pharmacists we are affected in so vital a manner that our future reputation and welfare are largely at stake. Prompt and vigorous measures are necessary if we are to avoid public calumny and disgrace.

"Why? For the very simple and apparent reason that a small minority of druggists are willing, nay, eager, to take advantage of the downfall of the saloon and seize upon the business which it is no longer able to continue. In some of the prohibition States, and in most of the "dry" towns and counties, it is recognized that liquor is a medicinal necessity, and the druggist is consequently given the legal right to dispense it for legitimate purposes. Sometimes a physician's prescription is demanded; in other instances it is provided that the sale must be only for "medicinal, chemical and sacramental purposes," and strict registration of every sale is required; in still other sections different methods are prescribed, but the fundamental expectation everywhere is that the pharmacist shall observe the spirit of the law and refrain from selling liquor as a beverage.

"Now, it is unquestionably wise and proper that, by some method or other, people who need liquor for legitimate purposes should be left with the means of procuring it, and the drug store is the natural and practically the only place to look to in such an emergency.

"No article in the materia medica is more useful and necessary than liquor, and it would be unfortunate indeed if pharmacists were everywhere denied the legal right of dispensing it. It would be nothing short of a professional disgrace of the most humiliating character if this privilege were to be taken from us through inability on our part to respect it in letter and spirit, and yet this very thing has been done in some States and sections and is threatened in others.

"Every county or city association in 'dry' territory might well make the matter a local issue, take control of the situation, outline a policy, eject members who violate the law, co-operate with the legal authorities, and convince the public, the newspapers, and the officers of the law that pharmacy is a dignified and honorable occupation which will tolerate no liquor abuses. This, as I see it, would prove the most effective method of remedying the evil and averting the crisis."

As a result of Mr. Mason's address, the Association adopted resolutions declaring that any druggist who goes into the illegitimate sale of liquor is a disgrace to the profession and should be ostracized by it, and calling upon the local authorities to assist in exposing and penalizing those druggists who abuse their privileges and who thus drag the name of pharmacy into the mire of infamy and degradation.

Laudable as this effort is, it will prove of little avail until higher moral standards reach all classes, including even the liberal professions. The American Medical Association has preached for years against the nefarious traffic in secret and proprietary medicines, but in spite of solemn protests and ostracism, the frightful list of such harmful compounds increases at the rate of about 200 a year. Mountebanks and hypocrites are not easily subdued and when compelled to respect the liquor law may have recourse to a number of medicinal preparations which are protected by patents or trade-marks. The following list of medicinal preparations have been analyzed in the Office of the Commissioner of Internal Revenue and are classed as compound liquors for the sale of which a special tax is required:

PATENT AND PROPRIETARY COMPOUNDS CONTAINING SUFFICIENT ALCOHOL TO BE INTOXICANTS.

% Alcohol by Vol.	
16.16	American Alimentary Elixir.
45.00	Angostura Aromatic Tincture Bitters.
19.60	Aroma Stomach Bitters.
42.14	Aromatic Bitters.
32.70	Atwood's La Grippe Specific.
35.65	Augauer Kidney Aid.
34.13	Augauer Bitters.
20.32	Belvedere Stomach Bitters.
21.14	Bismarck Laxative Bitters.
20.67	Bismarck's Royal Nerve Tonic.
16.35	Blackberry (Karles Medicine Company).
19.84	Blackberry Cordial (International Co).
19.96	Blackberry Cordial (Irondequoit Wine Co.
21.50	Blackberry Cordial (Strother Drug Co).
25.62	Blackberry & Ginger Cordial (Standard Chemical Co).
44.62	Black Tonic.
20.34	Bonekamp Stomach Bitters.
37.03	Bonekamp Bitters.
42.14	Brown's Aromatic Cordial Bitters.
19.45	Brown's Utryme Tonic.
27.32	Brown's Vin Nerva Tonic.
20.44	Botanic Bitters.
18.82	Celery Pepsin Bitters.
27.44	Cinchona Bitters.
35.90	Clifford's Cherry Cure.
24.77	Clifford's Peruvian Elixir.
16.55	Cooper's Nerve Tonic.
42.65	Crescent Star Jamaica Ginger.
——	Coca Wine.
10.75	Calisaya.
31.09	Cuban Gingeric.
30.15	Dandelion Bitters.
23.86	De Witt's Stomach Bitters.
29.04	Dr. Brown's Blackberry Cordial.
19.64	Dr. Brown's Tonic Bitters.
15.82	Dr. Hopkins' Union Stomach Bitters.
26.30	Dr. Hoffman's Golden Bitters.
21.67	Dr. Sterki's Ohio Bitters.
28.84	Dr. Dade's Blackberry Cordial.
39.83	Dr. Bouvier's Buchu Gin.
33.70	Dr. Fowler's Meat & Malt.

% Alcohol by Vol.	
18.30	Dr. Gray's Tonic Bitters.
15.89	Dr. Hortenbach Stomach Bitters.
27.92	Dr. Worme's Gesundheit Bitters.
27.10	Dr. Rattinger's Bitters.
18.74	Dubonnet.
	Dubonnet Wine.
	Duffy's Malt Whiskey. (Whiskey.)
23.01	Ducro's Alimentary Elixir.
16.94	Elixir of Bitter Wine (Pleasant Tonic Bitters Co).
22.96	Elixir Calisaya.
9.18	Eucalyptus Cordial.
32.10	Ferro China Bascal.
28.87	Ferro China Bissler.
16.96	Ferro Quina Bitters.
18.35	Fine Old Bitter Wine.
26.10	Gastrophan.
39.95	Gentian Bitters.
13.28	Genuine Bohemian Malted Bitter Wine Tonic.
23.81	Gilbert's Rejuvenating Iron and Herb Juice.
25.31	Ginger Tonic.
14.86	Ginseng Cordial.
39.72	Glycerine Tonic (Elixir Pepsin).
37.88	Green's Chill Tonic.
11.06	Greiner's Blackberry Cordial.
17.79	Harrison's Quinine Tonic.
19.35	Health Bitters.
16.76	Herbton.
14.95	Herbs Bitters.
24.95	Jack Pot Laxative Bitter Tonic.
14.60	Jarvis Blackberry Brandy.
15.75	Jerome's Dandelion Stomach Bitters.
——	Jones' Stomach Bitters.
22.89	Juni-Kola.
24.21	Juniper Kidney Cure.
21.56	Karlsbader Stomach Bitters.
27.60	Katarno.
24.12	K. K. K.
20.68	Kola and Celery Bitters.
13.54	Kola Wine.
40.22	Kreuzberger's Stomach Bitters.
29.33	Kudros.
18.11	Lee's Celebrated Stomach Bitters.
28.88	Lemon Ginger.
——	Laxa Bark Tonic.
12.80	Magen Bitters.
32.98	Meta Multa.
16.80	Mikado Wine Tonic.
20.68	Milburn's Kola & Celery Bitters.
10.55	Miod Honey Wine.
32.02	Neuropin.
18.36	Newton's Nutritive Elixir.
44.93	O'Hare's Bitters.
16.56	Obermueller's Bitters.
40.02	Old Dr. Jacques Stomach Bitters.
24.74	Old Dr. Scroggin's Bitters.
26.24	Our Ginger Brandy.
3.10	Ozark Stomach Bitters.
32.83	Panama Bitters.
34.96	Pepsin Stomach Bitters.
23.12	Peptonic Stomach Bitters.
11.54	Pioneer Ginger Bitters.
18.74	Quinquina Dubonnet.
17.38	Rimsovo Malto-Sove Vino Chino.
23.85	Rockandy Cough Cure.
19.80	Royal Pepsin Tonic.
18.12	Scheetz Bitter Cordial.
22.66	Severa's Stomach Bitters.
19.92	Sirena Tonic.
11.94	Smart Weed.
34.41	Smith's Bitters.
32.05	Steinkonig's Stomach Bitters.
18.88	St. Raphael Quinquina.
16.33	Strauss Exhilarator.
22.90	Tatra. (Latra.)
30.08	Tolu Rock and Rye.
26.09	True's Magnetic Cordial.
32.14	U-Go.
30.06	Uncle Josh's Dyspepsia Cure.
19.67	Warner's Stomach Bitters.
31.96	Westphalia Stomach Bitters.
17.34	White's Dyspepsia Remedy.
37.00	William's Kidney Relief.
13.00	Zeman's Medicinal Bitter Wine.

*The percentage of alcohol was ascertained from the Commissioner of Internal Revenue in a communication dated November 28, 1908.

On the whole the problem must be solved by educational methods, and hygiene offers many valuable suggestions. It teaches that intemper-

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*Compiled from Circular No. 713, Dec. 3, 1907, and No. 727.

Circular No. 713 contains the following paragraph: "It must be clearly understood, however, that the list here given is not exclusive and does not purport to give the names of all the preparations for the sale of which special tax is, or may be required, but embraces only those which have been analyzed by this Office, and held to be insufficiently medicated to render them unsuitable for use as a beverage. * * *"

ance is a vice the result of a violation of natural laws and in order to eradicate the evil and far-reaching consequences we must endeavor to remove the primary causes. Reference has been made to mental and physical fatigue as an important predisposing factor. The indications are to regulate our life so that we do not burn the candle at both ends, take more rest, more recreation and more interest in genteel amusements calculated to counteract the influence of saloons. The eight hour labor law is indicated in the interest of health and morals. Quite a number of clear-headed employers appreciate their responsibility in this matter and have appointed social secretaries, "whose duty it is to watch not only over the health, comfort and happiness of the force during working hours, but also to obtain sufficient knowledge of their private life to be a real help in times of trouble. The Secretary establishes luncheon rooms, rest rooms, mutual aid associations, thrift funds and penny provident banks. Besides the usual betterment features the Secretary also arranges many forms of amusements, such as dances, lectures and musicales. If this functionary did nothing more than to teach working people how to enjoy themselves in a sane, healthy way the work would be justified. * * * The cardinal principle of the social Secretary's gospel are sanitation, recreation and equalization." ("Review of Reviews," August, 1906.)

Hygiene long ago recognized that dust-producing occupations, exposure to extremes of heat and cold and to the inhalation of offensive gases, etc., are fruitful causes of disease in general and the drink habit in particular, and has also pointed out how the injurious effects may be prevented or at least mitigated. Until this is accomplished by universal factory sanitation, pure drinking water and non-alcoholic beverages should be furnished by the employer. Indeed, efforts are being made in Germany to limit in every reasonable way the consumption of alcoholic beverages, by the establishment of canteens in industrial plants for the sale of coffee, tea, cocoa, milk, hot soups and soft drinks of every description, all of which allay thirst, while many are stimulating without the injurious effects of alcohol.

In 1905 the breweries of Munich and other Bavarian cities stopped the issue of free beer to employees, but allowed an extra compensation of 25 cents a day for beer money. The consumption has been reduced from an average of 6 quarts to 1¾ quarts for each employee a day.

Money spent in temperance saloons, especially for warm, wholesome food and drinks, will be a good health investment, provided, of course, they are consumed within reasonable limits. It may be stated in general terms that, while coffee, tea, cocoa, spices and condiments in moderation stimulate the central nervous system, and increase temporarily the elasticity of mind and body, their abuse is fraught with danger, and we may have "coffee and tea topers" who suffer from diseases of the nervous system.

One of the most effective weapons against intemperance will be found in the thorough training of our girls in domestic science, preferably in the public schools. Apart from the fact that the average expenditures for food are larger than for any other single item, the question of well selected and properly cooked food and of "home making" generally, is of the utmost importance to the health and morals of the community. No woman can aspire to higher accomplishments than to be a good cook; and a true "housewife" can do more for the physical and moral development of her family, and the cause of temperance, than all the moralists combined. A thoughtful mother, apart from seeing that her family is supplied with good food, will also make the home attractive, inculcate esthetic home tastes and, above all, a spirit of thrift and economy. The habit of saving money can not be too strongly urged upon children, and when once strongly rooted offers one of the best safeguards against expenditures for immoral purposes. The beneficent effects of the provident savings system are fully recognized by charity workers and quite a number of American cities have introduced the stamp saving system into the public schools.

Much may be done for the cause of temperance and general sanitation by introducing the subject of hygiene as a part of the curriculum in our schools and colleges, so that the children, the future parents and citizens, may acquire accurate knowledge upon this and other subjects in relation to health and disease.

Apart from educational methods we should bear in mind that man is essentially a social animal and if he asks for bread we have no right to offer him a stone. He needs opportunities for recreation to vary the monotony and turmoil of life, and many a young man, with the best of intentions, has found his way to saloons and places of evil resort for lack of better opportunities. When we supply clean and decent amusements we can indeed hope for a higher cultivation and moral training of the male youth of all classes. The writer notes with gratification that such an effort was made in 1902 by the establishment of the "Everett Clark Club House," the gift of Mrs. Potter, wife of the Bishop of New York, and her son, Lieutenant Clark, U. S. A., to the members of Grace Episcopal Church, Elizabeth, N. J. The special interest of this gift lies in the fact "that it is a signal example of intelligent contribution to the needs of the whole man—religious, physical, social and esthetic. Under one roof there is a chapel, kitchen, restaurant, dining, reading, card, committee, smoking, shuffle board and billiard room, a swimming tank and other baths, gymnasium, running track and bowling alleys." ("Outlook.")

Similar efforts have been made in connection with our local churches, and it is to be hoped that the time is not far distant when every church and school in the land will also become a social center.

The writer is familiar with the excellent results obtained in one of the Boston churches, in co-operation with the medical profession, in the cure of consumption and nervous invalids. While not deprecating such efforts, it must be conceded that the most substantial and permanent results will be achieved by preventive rather than curative measures, which primarily involves the removal of the cause. So, for example, every effort to diminish intemperance, the drug habit and sexual excesses, will reduce the number of nervous, mental and moral wrecks. Likewise every effort to improve the housing conditions and standards of living will diminish the number of consumptives.

It is sincerely hoped that the wage-earners of this country, in addition to cultivating home life and higher ideals, will hold their meetings in buildings wholly divorced from saloons, along strictly ethical lines and in every way in keeping with the dignity of labor. There is certainly room for special buildings dedicated to the improvement of artisans and their industrial and social conditions.

RECREATION AND INEXPENSIVE AMUSEMENTS.

By Mabel T. Boardman.

That all people, from the lowest savages to the most civilized races, crave recreation and amusement is a fact that is recognized by all, but the importance of providing sane and wholesome entertainment to satisfy this craving is too much overlooked in the case of the least resourceful people. The playground system, boys' and girls' clubs and social settlement entertainments are fortunate movements along this line as far as children are concerned, but too little has been done to meet this same desire in the older generation. The habits of intemperance and kindred vices are formed not in a man's working but in his recreation hours. The saloon has been frequently called "The poor man's club," and it is quite natural that a man's social inclination should take him where he may find congenial company. He desires the recreation of a chat with his fellow-men. His home is too small, or too much occupied by his family, for him to gather with them there. The factories, or the other places where he may work, are closed, and where save in the saloon can he find the companionship he desires? He cannot frequent a saloon without becoming its patron, and while at first he seeks it merely for the sake of social companionship, he may become its habitué for the sake of drink.

It is unfortunate that in this country there exist so few places like the beer gardens and halls of Germany, where a man can take his family and at a very small expense listen to good music, gossip with his friends and spend a sane and wholesome evening. If only the philanthropists of a city would build and partially endow some large amusement hall, so constructed that in summer it could be turned into an almost open-air garden, where every evening a good orchestra would provide popular music, or some unobjectionable vaudeville performance be given, while the men could sit talking and smoking around the tables, their families gathered about them, a great deal could be accomplished in the way of keeping them from the temptations the saloon affords. Young men and women of the families could have a respectable place in which to meet, and, with some oversight, arrangements might be made for part of the large hall to be devoted to dancing. Soft drinks and beer could be sold. Men and women whose daily labor may be of a nature that requires little mental work would find the daily task much lightened, for while their hands are occupied with routine work their minds would be filled with the memories of a pleasant yestereven or the anticipation of another one to come.

The dreary and monotonous home lives of many of the women would not only be lightened by the opening of such great halls during the afternoon hours, but the opportunity on cold and rainy days in winter, or on the hot days in summer, of keeping their children about them in a physically and morally healthful atmosphere would prove of great benefit. The influence of the mother over her children is far greater than can be that of the father, whose work keeps him so much occupied during the day, and anything that can help to improve and better her existence cannot fail to directly affect that of her children. For a time taken out of the drudgery of her daily life amused and entertained, much of the dull and tired feeling that often makes her cross, nagging and irritable, will depart and the home will become a far happier place for the husband and children.

Educational departments have in many cities wisely provided public lectures on a great variety of subjects, mainly of an educational character, but human nature does not wish to devote all its hours of recreation to improving its mental conditions. It desires relaxation; it wants to be amused. The children of the larger growth need their play time, too, and

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it is to the satisfying of this craving on the part of the least resourceful people that too little consideration has been given. Of themselves they can provide little or nothing, and the natural desire for amusement makes them too often the prey of the saloon, the cheap sensational theater, or the morbid shows of the penny-in-the-slot character. Thousands of boys and girls leave school every year at the most formative period of their lives, and the nature of the recreations and amusements they indulge in will have a lasting influence and may properly be considered as having still to do with their education in a broad sense. The enormous growth of the five and ten-cent theaters and their popularity in all of our large cities is sufficient proof of the need of cheap amusements. When the entertainments provided by them are sane and wholesome, even though not of the most elevated nature, they should be encouraged, but certain powers of supervision over these places should lie in the hands of some civic authority, possibly the Board of Education.

Public lectures of a popular nature, travel monologues with stereopticon views, etc., should be provided by the educational department of the city and the public schools used for this purpose in the evenings. Doubtless, volunteers for many such lectures could be secured, so that with lecturers and places provided free of cost, the expense need not be great. The parish halls, chapels and Sunday school buildings of churches might also be utilized for this purpose.

If the importance of healthful and wholesome amusement to gratify this demand of human nature is recognized and provided for, there is no doubt there would result a marked reduction of intemperance among the least resourceful people and a general uplift in their social condition.

THE DRUG HABIT.

The writer, as a member of a Committee of the Medical and Surgical Society of the District of Columbia, appointed in 1896 to investigate the extent of the opium habit, had occasion to witness the physical and moral impoverishment which results from the use of drugs which enslave.

The Report of the Committee was published as Senate Document No. 74, 54th Congress, 2nd Session, and shows that, during the ten years ending June 30th, 1895, seven persons died from the opium habit, 36 persons died from accidental or negligent opium poisoning and 36 committed suicide with opium or its preparations. Of the accidental deaths 12 were under five years of age, while the remainder were over 20 years of age.

The statistics have been ext^nded by Dr. H. C. Macatee, and are as follows:

Year.	Deaths from Opium Habit.	Suicides from Poisoning by						Accidental or Negligent Fatal Poisoning by						Deaths from Alcoholism.		
		Narcotic Poisons.		Corrosive Poisons.		Miscellaneous, including Carbolic Acid and Gas.		Narcotic Poisons.		Corrosive Poisons.		Miscellaneous, including Carbolic Acid and Gas.				
		5 yrs.	Over 5 yrs.	5 yrs.	Over 5 yrs.	5 yrs.	Over 5 yrs.	5 yrs.	Over 5 yrs.	5 yrs.	Over 5 yrs.	5 yrs.	Over 5 yrs.	5 yrs.	Over 5 yrs.	
1886	1	...	2	...	...	...	...	...	1	...	...	...	...	...	...	Table compiled by Dr. Kober. Refers to Opium only. For 10 years, ended June 30, 1895.
1887	...	...	1	...	...	...	...	2	...	...	...	...	...	...	...	
1888	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
1889	2	...	1	...	...	...	...	...	1	...	...	...	...	...	...	
1890	1	...	5	...	...	...	...	...	1	...	...	...	...	...	...	
1891	2	...	3	...	...	...	...	2	1	...	...	...	...	...	...	
1892	...	...	6	...	...	...	...	...	3	...	...	...	...	...	...	
1893	...	...	4	...	...	...	...	3	5	...	...	...	...	...	...	
1894	...	...	5	...	...	...	...	2	9	...	...	...	...	...	...	
1895	1	...	9	...	...	...	...	3	3	...	...	...	...	...	...	
1896	...	...	7	...	3	...	2	1	4	...	1	8	...	...	35	
1897	...	...	4	...	9	...	10	...	4	3	2	1	12	...	25	
1898	...	...	4	...	7	...	2	2	5	1	...	...	3*	...	7	* 1 from Cocaine.
1899	2	...	2	...	3	...	1	1	6	1	1	...	1	...	17	
1900	...	...	3	...	6	...	6	...	4	...	2	...	3	...	21	
1901	2	...	9	...	1	...	10	...	9	1	...	1	10†	...	34	† 1 from Paraldehyde.
1902	1	...	...	...	1	...	12	4‡	3	...	2	...	...	...	15	‡ 1 from Quick Pain Killer. (Opium)
July 1 to Dec. 31 1902	...	...	1	...	1	...	4	...	1	...	...	...	1	...	9	
Calendar year 1903	3	...	6‖	...	3	...	14	1‖	3‖	...	...	...	18	...	23	‖ 11 from Opium.
1904	...	...	7‖	...	3	...	20	2‖	4	..	...	6	11*	...	22	‖ 11 from Opium. *1 from Cocaine.
1905	...	...	4‖	...	...	...	19	...	...	1	...	4	9	...	24	‖ 11 from Opium.
1906	...	...	1	...	1	...	20	...	3§	...	...	1	3	...	23	§ 1 from Chloralhydrate.
1907	...	...	3‖	...	2	...	31§	...	...	2	...	3	5	...	32	‖ 11 from Opium. §19 from gas.
Total	15 in 22 yrs.		87 in 22 yrs.		40 in 12½ yrs.		151 in 12½ yrs.	23 in 22 yrs.	70 in 22 yrs.	9 in 12½ yrs.	8 in 12½ yrs.	24	76		287	

In addition there were treated during the same period in the four hospitals of this city 125 cases of opium poisoning and 70 patients for the opium habit. Dr. Macatee has continued this investigation up to date and finds that during the last nine years 256 patients have been treated for the opium habit in seven of our hospitals, and 62 patients for the cocaine habit in three of our hospitals. The Report of the Committee referred to says: "Without a most exhaustive collective investigation it is impossible to even estimate the number of persons treated by physicians for acute or chronic opium poisoning who may recover from the immediate effects of the drug or who have died victims of the opium habit and in which the cause of death may have been assigned to some remote pathological effects of the drug."

The investigation of the Committee revealed, however, the fact that "there are quite a large number of persons in this city who have become the victims of the opium habit, and that the different preparations of the drug are used in the following manner:

(1) The hypodermic injection of morphia.
(2) The use of morphia by the mouth and rectum.
(3) The use of alcoholic preparations of opium by the mouth.
(4) The use of gum opium by the mouth (opium eating).
(5) The use of the extract of opium by inhalation (opium smoking).

In regard to the actual extent of the morphine habit and the amount consumed, either by the hypodermic method, by the mouth or rectum, it is difficult to present any definite data, but, judging from the statements of our pharmacists, there is scarcely one who does not recall one or more victims to the drug, and, while many refuse to sell morphia in unusual quantities, it is evident from their sales, general observations and calls for the drugs that the habit is widespread; some of the victims use as high as 1 dram of morphia a day, one store alone selling about $100 worth of morphia a month.

Quite a large number of pharmacists report sales in unusual quantities of the alcoholic preparations of opium, such as McMunn's Elixir, laudanum, papine, Squibb's Mixture, and proprietary or secret medicines containing opium, the demand for McMunn's Elixir being especially active, while paregoric and Squibb's Mixture supply the wants of many victims to the use of narcotics.

The use of gum opium (opium eating or chewing) is not so very common. Nevertheless, a sufficient number of sales in suspicious quantities reveals the existence of habitués to this form of the drug. In regard to the use of the extract of opium by inhalation (opium smoking) the data are quite meager. Pharmacists have occasional calls for the extract, but are of the opinion that the bulk is supplied by Chinese merchants. Dr. Wade H. Atkinson recently reported to this society a fatal case from opium smoking in the person of a white man aged 28. Dr. Atkinson, in presenting the case, says:

"I know of about 20 in this city, and I have asked a few others who could most probably estimate the number correctly. A popular drug clerk estimates the smokers at 150. A very noted clerk in a lunch room, who is well acquainted with several smokers, consulted with them and estimated the number at 500. A special detective in the police department says he thinks there are not more than 20 smokers, and only one "joint" here. Chinese are not considered in these estimates. I believe a fair average of 150 or 200 habitual smokers are in Washington, and know of two "joints."

Investigation into the causes of the opium habit leads to the conclusion that one class of subjects have contracted the habit by the use of the milder preparations of opium, such as McMunn's Elixir, paregoric, Squibb's Mixture, and some of the various proprietary or secret remedies usually employed as domestic remedies.

Another class have evidently acquired the habit by the constant use of prescriptions containing opium or its preparations for the relief of pain, the individuals being at first quite unconscious of the enslaving nature of the drug. Competent and experienced pharmacists are of the opinion that prescriptions containing opiates are more frequently refilled than other prescriptions; that copies of such prescriptions are frequently multiplied for friends, and that suppositories containing opiates are commonly renewed.

The social condition of the foregoing classes appears to be of a mixed character, and includes all grades of society, the rich and intellectual predominating. Another class of persons belong to the moral degenerates, or fast men and women, who have acquired the habit by contact with opium habitués and through solicitation, invitation and persuasion of fallen victims to the vice. In the opinion of many prominent pharmacists the habit, from whatever cause, is readily established, because opium and its preparations are altogether too easily obtained. Before considering the question as to the extent to which the State should exercise control in the interest of public health over the sale of poisons, reference should be made to the obligations of the physicians in the matter.

There can be no successful concealment of the fact that the prolonged and indiscriminate use of opium and its preparations, especially in neurotic subjects, has been a most fruitful cause of morphinism, and while inquiry reveals a decrease in the amount of morphia prescribed by the physicians, there are still a goodly number of so-called "morphine doctors" who have received this appellation by pharmacists because they are in the habit of making it one of the ingredients in nearly all of their prescriptions.

In view of the fact that prescriptions containing opiates are frequently refilled and taken in increased and unauthorized quantities, and may thus establish a habit, in the absence of legal restrictions all physicians should endeavor to reduce the danger from morphinism to a minimum by a judicious employment of the drug and careful supervision of the patient.

While some pharmacists believe that the request of the physician on the prescription "not to be renewed" would be generally respected, others believe that the prescription, having been declared the personal property of the patients, is subject to their orders only. It would possibly be wise not to incorporate opium and its preparations in any prescription, and when its use is indicated it might be dispensed by the physician without the knowledge of the patient as to the nature of the remedy. But perhaps the easiest way to solve the question would be to follow the lead of the New York legislature which, in June, 1887, enacted a law that no pharmacist, druggist, apothecary, or other person shall refill more than once prescriptions containing opium or morphine, or preparations of either, in which the dose of opium shall exceed one-fourth grain or morphine one-twentieth grain, except with the verbal or written order of a physician.

The Committee submitted drafts of two bills for consideration which it was believed would go far towards preventing the spread of the opium habit, and also expressed the opinion that, with regard to the sale of proprietary and secret medicines containing poisonous drugs, the contents should be clearly expressed on the label and the word "poison" added as required in the sale of poisons under existing acts. No action was taken for several years upon these recommendations, which were clearly in the interest of public health and morals. In the meantime the cocaine habit also assumed alarming proportions, so that Major Sylvester, Chief of the Police, in his annual report for 1904, p. 27, called attention to the fact that examination of the poison register of one dealer's place alone disclosed 40 sales in one day. The goods having been put in properly labeled envelopes, there was no violation of the law. In his report for 1905, p. 36, he pointed out that parties have been apprehended for peddling the drug from door to door and that some most worthy and capable people have wrecked their own lives and made that of others miserable. In each of his reports he urged appropriate legislative action.

A new pharmacy law was finally enacted and approved May 7th, 1906, which placed greater restrictions upon the sale of poisons in general and the habit-forming drugs, such as opium, morphine, cocaine, chloral in particular, and also made the filling of prescriptions containing such drugs in certain doses, except upon the written order of the signer of the original prescription, unlawful.

The Chief of Police in his report for 1906, on p. 23, says: "The cocaine habit and sale is the most difficult to cope with and the law should be so complete as to prohibit other than licensed druggists, physicians, dentists or veterinarians having it in his or her possession except on a physician's prescription, and then the package to bear the name of the physician and the patient for whom prescribed." In the report for 1907 he states "that the sale of cocaine has been largely reduced, but there are many who dispense the drug under cover."

Dr. Paul B. Johnson, in his investigation of 175 prisoners in the Washington Workhouse, found that 15 had intimate knowledge of the use of cocaine. "Cocaine was described always as used by sniffing the powder into the nostrils, either from the package, or from the palm of the hand, or from the fingers like snuff, or most often by dipping a short quill into the powder and placing the other end to the nostril. It was stated as easily purchased in drug stores or in the rear of bar rooms." Dr. Lyman F. Kebler, Chief of the Division of Drugs of the Bureau of Chemistry, U. S. Department of Agriculture, in a recent paper on the "dope question," refers to the cocaine habitué as socially inclined, offering a friend a "sniff." * * * In fact, whole circles assemble to enjoy a cocaine spree, where the dope, commonly known as "coke," is passed from one to another to take an allotted sniff. In speaking of the effects, Dr. Kebler states that "cocaine in some cases transforms otherwise safe and tractable citizens into dangerous characters, and in most instances wrecks the individual and all depending on him as well as jeopardizes the lives of many."

Major Sylvester, in a letter dated December 6th, 1908, writes as follows: "Investigation shows that there were about a half dozen druggists making a specialty of the sale of cocaine and other drugs, and a dozen or more selling such to a few customers; the other druggists in the District would not make such sales except to persons whom they had reason to believe would use the same for legitimate purposes, and some of them would not handle it at all.

"Upon the passage of the present pharmacy law, such sales were stopped by druggists, except a limited number who continue the sale to customers upon whom they could rely not to betray them, and who were actuated by sympathy rather than other motives; three or four others continued the sale, only to be apprehended and fined.

"The member of the force detailed as Inspector of Pharmacy has had occasion to bring to Court three physicians for writing prescriptions for morphine and cocaine, all of which were aggravated cases, and he has given notice to others not to indulge in the practice.

"The Department, in this work, has had the cordial co-operation of physicians generally, and finds that in their opinion the drug habit, especially morphine, is due largely to the injudicious prescribing of drugs, and it has evidenced an inclination on the part of physicians to curtail the use of them.

"In the course of his investigation the Inspector found that morphine fiends, with two exceptions, had become addicted to the use of the drug through sickness or injury; one of those excepted stated he formed the habit through no other cause than that of the lowest depravity, while the other stated he became addicted to its use through having it prescribed by a physician after getting over a long spree.

"I am informed that there are one or two physicians who have a few patients whom they feel in duty bound to supply with the drug.

"It is believed that if the law could be made stringent enough to put the sale of morphine beyond the reach of such persons, after they had been treated under confinement, they would make useful citizens.

"The morphine, laudanum, and kindred drug users, according to the observation of the Inspector of this department, have been greatly reduced in number through the efforts of the medical profession.

"The habit of opium smoking has never become serious in this city; it was slightly increased with the passage of the pharmacy law, as the drug is easier to get from Chinamen, who are hard to detect. It is confined principally to degraded persons, both white and black, who are beyond reformation. Arrests are made by the police and penalties imposed upon the Chinese engaged in the traffic. I think if the penalties inflicted were a little more severe the effect would be more ample.

"The Inspector states that in the course of his investigations he has learned of no foreign white people who are addicted to the drug habit. He finds that the cocaine habit is by far the greatest menace to society because the victims are generally vicious. The use of this drug superinduces jealousy and predisposes to commit criminal acts. In districts where druggists formerly dispensed cocaine, disorder has decreased so noticeably that it is commented upon by the neighbors and the police officers on the beats; it has also had the effect that a large percentage of persons using cocaine will not make an effort to get it when it is accompanied by the risk of arrest.

"The present source of supply is mainly through druggists who are not now in the business, and clerks who are employed at drug stores, who, it is believed, deliver it to persons to peddle when they can find anyone who will purchase. Others procure it from the near-by suburban towns, localities without this jurisdiction.

"It is quite a difficult matter to convict these people, as possession of the drug is not held to be sufficient evidence. In Virginia possession is held to be evidence of intent to sell, and is punishable by not less than one nor more than five years in jail. Under the present law there is no distinction between a clerk and a proprietor; if a person is registered he can purchase any amount. No person other than a druggist should have the privilege of handling cocaine.

"It is believed that there are about a dozen persons who peddle cocaine from time to time, and those who use it are numbered approximately by the Inspector's report at about one hundred. The number of persons who use morphine cannot be approximated, as they are distributed throughout all classes of society. Many who use the drug are not known as such habitués outside of their own homes. There have been a number of peddlers or writers of bogus prescriptions arrested and fined from fifty to two hundred dollars, or sent to jail. My information is that the sale of cocaine is about one-tenth of what it was before the present law went into effect." * * *

Medicinal Preparations Which Contain Habit-Forming Drugs.

Dr. Kebler says: "There are upon the market many medicinal preparations which contain, as ingredients, habit-forming drugs. Such drugs are: alcohol, opium and its derivatives, notably morphine, codeine and heroin; cocaine, chloral, cannabis indica, acetanilid, etc."

The presence of most of the habit-forming drugs, under the provisions of the Pure Food and Drugs Act, must now be declared upon the label of drug products, and the public is thus made aware to some extent of the nature of preparations containing these agents. The drug products which contain opium and its derivatives most frequently are the pain-killers, cough and consumption cures, and soothing sirups.

Below is given a list of some of the medicinal preparations which contain habit-forming drugs other than alcohol:

Coco-Bola. (Cocaine.)
Godfrey's Cordial. (Opium.)
Harrison's Opium Elixir. (Opium.)
Wright's Instant Relief. (Opium.)
Crossman's Specific Mixture. (Opium.)
Petit's Eye Salve. (Morphine.)
Brou's Injection. (Morphine.)
Carney Common Sense Cure. (Morphine.)
Habitina. (Morphine.)
Anglo-American Catarrh Powder. Agnew's Powder. (Cocaine.)
Captol. (Chloral.)
Gowan's Pneumonia Cure. (Opium.)
Dr. James' Soothing Syrup. (Heroin.)
Mrs. Winslow's Soothing Syrup. (Morphine.)
Children's Comfort. (Morphine.)
D. D. D. Remedy. (Chloral.)
Mexican Oil. (Opium.)
One Day Cough Cure. (Morphine, Cannabis Indica.)
Tousley's Sneezeless Snuff. (Morphine.)
Watkin's Anodyne. (Heroin.)
Dr. Drake's German Croup Remedy. (Opium.)
Dr. Seth Arnold's Cough Killer. (Morphine.)
Piso's Cure. (Cannabis Indica.)
Boschee's German Syrup. (Morphine.)
Shiloh's Cure. (Heroin.)
Tubercine. (Opium.)
Hooper's Anodyne. The Infant's Friend. (Morphine.)
Pierce's Smart Weed. (Opium.)
Colwell's Egyptian Oil. (Opium.)
Maguire's Compound Extract Benne. (Morphine.)
Dr. Fahrney's Teething Syrup. (Morphine.)
Jayne's Expectorant. (Opium.)
Taylor's Sweet Gum and Mullein Compound. (Morphine.)
Victor Lung Syrup. (Opium.)
Dr. Moffett's Teethina. Teething Powders. (Opium.)
Tucker's Asthma Cure. (Cocaine.)
Rexal Cholera Cure. (Opium.)
Fruit-Lax. (Morphine.)

DANGER OF SOFT DRINKS CONTAINING HABIT-FORMING DRUGS.

In this connection attention is directed to the danger of soft drinks containing caffeine, extract of kola nut and extract of coca leaf, the active principle of the two latter being cocaine. According to Dr. Kebler, see Appendix, there are now nearly one hundred different medicated soft drinks on the market.

These beverages are extensively advertised, some, in fact, as headache remedies and nerve tonics, and sold at nearly every soda-water fountain or as carbonated goods in all parts of the country without the slightest warning to the public of the harmful ingredients contained therein. We restrict the use of coffee and tea in children and delicate nervous individuals, and yet these same persons frequent the soda fountains, regale themselves with soft drinks, quite unconscious of their contents, experience the stimulating and refreshing effects and soon fall victims to the habit, so that even "Coca Cola fiends" have come into prominence. We have seen how the opium habit may be acquired by the use of the various proprietary or secret preparations (pain killers), usually employed as domestic remedies, and so the cocaine habit may be developed by the use of these much-lauded soft drinks.

It is a significant fact that Mr. Vanzant, the special police officer charged with the execution of the Pharmacy Law, with the exception of the Chinese opium fiends, has never encountered other foreigners who are addicted to the drug habit. This may be accounted for by the fact that nowhere is the habit of self-medication with secret or proprietary medicines for each and every ailment so widespread as in this country. No wonder that insanity and diseases of the nervous system are on the increase, and that the physical, moral and mental wrecks of the alcohol and drug habit continue to swell the number of dependents in hospitals, insane asylums and other public institutions.

From a careful analysis of the evidence it is apparent that the sale of habit-forming drugs is still carried on through the instrumentality of (1) unscrupulous local dealers, (2) depraved and unscrupulous local physicians and (3) through dealers, physicians, agents and peddlers located in other jurisdictions.

The writer has reached the conclusion that Major Sylvester's proposed amendment to the present law will not prove effective unless a law is enacted permitting the revocation of a license to physicians, dentists and veterinarians whenever in the judgment of the Court such persons are abusing the privilege of prescribing these drugs. A law should likewise be enacted regulating the transportation of habit-forming and poisonous drugs in interstate and foreign commerce, as contemplated by H. R 21,982, introduced by Mr. Mann, May 12, 1908.

REMEDIAL MEASURES FOR THE VICTIMS OF THE ALCOHOL AND DRUG HABIT.

The Reports of the Chief of Police show that during the five years' period ended June 30, 1908, there were 27,985 arrests for intoxication in the District of Columbia, an average of 5,596 per annum. Of these, 18,075 were arrests for simple intoxication, and 8,288 arrests for intoxication and disorderly conduct. There being no law against simple intoxication, those detained for this cause are released by the police after they have sobered up. Such cases are taken up as obstructions and for their own security and welfare, and of these 18,075 cases no doubt "many were saved from injury, robbery and sickness, if not from death." In spite of precautions taken by the police, a number of deaths from acute alcohol poisoning have occurred in police cells, indicating the necessity of greater discrimination in the care and treatment of such cases.

There were 1,622 arrests, an average of 324 per annum, on the charge of habitual drunkenness, and these, together with those charged with disorderly conduct, are held for the court and many find their way into the workhouse or jail. It is lamentable that 15 of the 675 arrests of persons under the age of 21 years were arrested as "habitual drunkards."

NUMBER OF ARRESTS IN THE DISTRICT OF COLUMBIA FOR INTOXICATION, AND INTOXICATION COUPLED WITH DISORDERLY CONDUCT, FOR THE FIVE YEARS ENDED JUNE 30, 1908:

UNDER 21 YEARS OF AGE.

		Male.	Female.	White.	Colored.
1904	Habitual drunkard	2	..	2	..
	Intoxication	60	4	45	19
	Intoxication and disorderly	60	20	17	63
1905	Habitual drunkard	3	..	2	1
	Intoxication	59	4	47	16
	Intoxication and disorderly	69	16	29	56
1906	Habitual drunkard	1	..	1	..
	Intoxication	55	9	37	27
	Intoxication and disorderly	44	19	20	43
1907	Habitual drunkard	4	..	2	2
	Intoxication	50	8	27	31
	Intoxication and disorderly	51	25	27	49
1908	Habitual drunkard	4	1	3	2
	Intoxication	50	4	29	25
	Intoxication and disorderly	35	18	17	36
		547	128	305	370
					675

Over 21 Years of Age.

		Male.	Female.	White.	Colored.
1904	Habitual drunkard	214	12	188	38
	Intoxication	2978	150	2457	671
	Intoxication and disorderly	1531	201	945	787
1905	Habitual drunkard	261	13	211	63
	Intoxication	3265	206	2674	797
	Intoxication and disorderly	1469	198	986	681
1906	Habitual drunkard	272	18	227	63
	Intoxication	3529	241	2883	887
	Intoxication and disorderly	1518	236	976	778
1907	Habitual drunkard	413	25	341	97
	Intoxication	3521	236	2870	887
	Intoxication and disorderly	1246	182	692	736
1908	Habitual drunkard	340	39	273	106
	Intoxication	3395	251	2775	871
	Intoxication and disorderly	1215	135	684	666
		25,167	2143	19182	8128
					27,310

Dr. Macatee's investigation shows that during the past nine years 9,510 patients were treated in the hospitals of the city of Washington for alcoholism; 409 for delirium tremens; 256 for the opium habit, and 61 for the cocaine habit; the majority of these were treated at public expense.

An investigation of the records of the Board of Charities reveals the fact that the daily average number of insane chargeable to the District of Columbia has increased from 1,035 in 1901 to 1,317 in 1908. The Board, recognizing that the alcohol and drug habit are two of the best-known causes of insanity, in 1907 made provisions, in connection with the old almshouse building, for the cure and treatment of such habitués among the dependent classes. A bill introduced by Senator Gallinger, April 6, 1908, is now pending before Congress, making habitual drunkenness, the habitual use of opium or other narcotic drugs a misdemeanor, punishable by a fine or incarceration in the hospital for inebriates for not longer than two years. The act contemplates a rational care and treatment for the cure of the habit, which is best secured by a good dietetic and hygienic regimen, followed by some useful occupation as soon as the patients are able to work, so as to make them self-supporting during the period of abstinence and restraint. The former system of confining such persons in the workhouse and jail is cruel and wholly ineffective.

The crying need for compulsory restraint has been pointed out by the Chief of Police over and over again, and the appeal for humane and scientific treatment of husbands, fathers, brothers and wives is not of recent date. As a matter of fact,* Congress, in an act approved March

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*Extract from letter of the Board of Charities to the Commissioners, February 4, 1908.

30, 1876, known as "An act to incorporate the Washington City Inebriate Asylum in the District of Columbia," approved the principle of compulsory restraint and treatment of inebriates. This act provided for the organization of a private institution authorized to receive both free and pay patients, and provided for commitment by court to said institution. * * * Apparently the incorporators never organized the institution as authorized in the act.

ADVERTISED HABIT CURES.

It is high time that some rational method for the permanent reclamation of these unfortunate victims be adopted in this and other communities. As it is now the rich and poor alike fall an easy prey to advertising charlatans, who profess to cure the drug and alcohol habit, when as a matter of fact these so-called drug cures merely aggravate the habit and never cure it, and in the case of the alcohol cures, the patients' stomach and digestion are often permanently injured and no real good is accomplished. Mr. Samuel Hopkins Adams, in "Collier's Weekly," September 22, 1906, published a list of sixteen advertised cures for the opium habit when in each case the remedy contained morphine, and says: "The whole purpose is to substitute for the slavery to the drug purchased at the corner pharmacist, the slavery to the same drug disguised, purchased at a much larger price from the "Doctor" or "Institute" or "Society." It was hoped that with the enactment of the pure food law, which requires that the amount of habit-forming drug in any medicine be stated on the label, such nefarious practices would cease. Imagine my surprise at the audacity of a firm, when shown by Dr. Kebler a preparation known as 'Habitina,' recommended as a cure for all drug addictions, etc., when the label disclosed the fact that one ounce of the solution contains 24 grains of morphine." Mr. Adams mentions a remedy procured from the Rev. W. N. Richie, D. D., 156 Fifth avenue, New York, which contained 2.12 grains of crystallized morphine per dose; the ordinary dose for medicinal purposes is from 1/8 to 1/4 of a grain. No wonder this courageous writer speaks of the opium, morphine and cocaine cure quacks as the "wreckers who lure their victims to destruction by false signals." Nor are we surprised that one of these victims wrote to Mr. Adams: "When I tried to stop the remedy I found I could not and it was worse than the morphine itself. I then went back to plain morphine, but found that I required twice as much as before I took the cure. That is what the morphine cure did for me." In the appendix will be found Dr. Kebler's list of 52 alleged cures for drug and liquor habits. As an analytical chemist, he confirms the belief, long since held by the profession, that the drug cures in almost every instance contain a generous proportion of an opiate and most of the nostrums for the cure of the liquor habit contain some nauseating ingredients or slow emetics. The object of the latter treatment is in most cases to make the victim's stomach so sensitive that it will instantly reject anything of an irritating nature like alcohol. It will be readily conceded that such treatment is of no real value and is likely to produce permanent injury of the stomach and digestive functions. Mr. Adams' comments in "Colliers Weekly" on this subject are very much to the point. "The Sunday newspapers and small weeklies teem with advertisements of drink cures which are supposed to exorcise the alcoholic craving when secretly given in the tea or coffee. Few of these concoctions can be described as immediately dangerous, though none of them is really safe. All are swindles. They do not cure the drink habit. Once in a while some drunkard will succeed in breaking his fetters synchronously with the taking of the 'remedy,' and the wonderful 'cure' is heralded to the world. But the percentage of these cures is so small as to be practically negligible. * * * Speaking of the safe rule to follow in the cure for the drug and alcohol habit, he says: "Reputable sanitariums there are in plenty for this purpose; most physicians know of them. The addict who can not be cured in them can not be cured anywhere, and might better buy his poison at the regular rate than at a fancy price from the vicious quacks of the advertising school."

THE HARMFUL EFFECTS OF SO-CALLED ETHICAL PROPRIETARY MEDICINES, ACETANILID, ANTIPYRIN AND PHENACETIN.

Headache Remedies, etc.

Before considering the nostrum evil in general, attention should be invited to Dr. Kebler's excellent unpublished article on the harmful effects of the above remedies when employed promiscuously and without medical supervision. For the purpose of this paper it is simply necessary to state that these preparations were used at one time rather extensively by physicians for the reduction of temperature in fevers and for the relief of pain, especially in neuralgia and headaches. The profession, however, soon learned that the administration of these drugs was attended quite frequently with profound symptoms of depression and other untoward effects, and this, together with a number of fatalities incident to their use, resulted in a gradual but not complete discontinuance of the drugs. In the meantime, however, the pain-relieving properties of these drugs became known to the laity, and they are extensively used in their original form for the relief of headache and other pains, or as ingredients of many advertised cures for headaches, etc.

According to Dr. Kebler, there are approximately 365 headache remedies now on the market, and the list is by no means complete; about one-half of these have so far been examined by the Bureau of Chemistry under the Pure Food and Drugs Act (see appendix). Among these is the remedy known as Harper's "Curforheadake Brane Fude," which acquired, recently, notoriety in the local courts, and which, according to the Bureau of Chemistry, contained, among other ingredients, acetanilid and antipyrin. In regard to the ridiculous claim that such preparations act as food for the nerves or brain, the Judge in the case just referred to, in his charge to the jury, said: "If that word 'brain food,' spelled in the two different ways that it is spelled, would convey to the ordinary citizen the idea that it was a food for the brain as contradistinguished from the idea of a food for the whole body, then it is—and I so charge you in this first prayer—misleading and therefore a violation of the law."

The Department of Agriculture has carried on a very exhaustive investigation into the poisonous properties of these drugs for the very laudable purpose of sounding a note of warning as to the injurious and even fatal effects which may follow their ill-advised, prolonged or habitual use. The following table shows the number of instances in which poisoning, death or habitual use has been known to result:

TOTAL NUMBER OF CASES.

	Poisoning.	Death.	Habitual use.
Acetanilid	909	31	144
Antipyrin	592	15	7
Acetphenetidin (Phenacetin)	164	8	18
Total	1665	54	169

Of this total number, 852 were found in medical literature and 813 were reported by 400 of the 925 physicians to whom letters of inquiry had been directed by the Department. Dr. Kebler says: "Granting that the 525 physicians who did not reply had no cases to report, the question may be profitably asked—if 925 physicians have observed 813 cases of poisoning by these drugs, 28 deaths which were attributed to their use and 136 instances of habitual use, how many such cases have in all probability been observed by the 125,000 physicians scattered throughout the United States?"

THYROID EXTRACTS IN OBESITY OR ANTI-FAT CURES.

Dr. Kebler,* and more recently Drs. Reid Hunt and A. Seidell,† of the Hygienic Laboratory of the Public Health and Marine Hospital Ser-

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*"Journal A. M. A.," November 10, 1906.
†"Journal A. M. A.," October 24, 1908.

vice, have called attention to the frequency with which thyroid preparations are being used in the anti-fat nostrums. As in the case of the remedies just discussed, so, with thyroid extracts, have physicians become extremely cautious in their employment. These preparations were primarily used for the cure of goitre, and while they produced a marked reduction in the size of the tumor it was also found that they caused a marked loss in bodily weight, amounting in some instances from 2 to 11 pounds a week, all of which naturally suggested their employment for the reduction of obesity. But the careful observer soon found that these results were not without serious risks to the general health and practically abandoned the remedy except in some well-selected cases. The manufacturer of proprietary remedies seized, however, very promptly upon the opportunity to incorporate what must be considered dangerous remedies with other ingredients and offered them as "Obesity Food," —"Rengo Fruit," "Kellogg's Obesity Food," "Arbolum Mixture," "Marmola," with the usual assurances of being scientific and effective preparations for the reduction of fat. Since thyroid extract is characterized by Dr. Reid Hunt as "the most powerful tissue-destroying drug known" the effects upon the unfortunate victims of misplaced confidence can be imagined. The employment of these agents for this purpose is, however, of such recent date that no fatalities have been reported. We know, however, that several fatal cases were reported when employed under the supervision of competent physicians and, in November, 1906, in an editorial in the "Journal of the American Medical Association," the danger of "organotherapy" in producing arterial degeneration was pointed out, as well as the necessity of being "careful in the application of such remedies, and especially not to hand over the employment of them too freely to the public under such circumstances that they will be used over prolonged periods without proper safeguards and the careful observation of a trained medical mind."

THE NOSTRUM EVIL IN GENERAL.*

Our sociological study of 1,217 families in this city shows that they expended $2,032.39 per annum for patent or proprietary medicines. The annual expenditure in the United States has been estimated to be not less than $62,000,000. The far-reaching consequences of this traffic, which impoverishes the health and depletes the pocketbook of a large class of persons, has been made, in a fearless and most commendable manner, the subject of popular education, notably by the "Ladies Home

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*The author is indebted to Dr. M. G. Motter for valuable references to the literature of the subject.

Journal," "Collier's Weekly," the "Journal of the American Medical Association," "Pharmaceutical Journal" and by Professor Harvey W. Wiley and his associate, Dr. Lyman F. Kebler of the Bureau of Chemistry, U. S. Department of Agriculture.

The writer has long since taken a keen interest in the subject because as a sanitarian he felt convinced that the harmful effects of this nefarious business upon the health and general welfare of the community have never been sufficiently emphasized, even by the medical profession. The American Medical Association adopted the following principles over fifty years ago: "It is equally derogatory to professional character for physicians to hold patents for any surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances; to assist unqualified persons to evade legal restrictions governing the practice of medicine; or to dispense, or promote the use of, secret medicines, for if such nostrums are of real efficacy, any concealment regarding them is inconsistent with beneficence and professional liberality, and if mystery alone can give them public notoriety, such craft implies either disgraceful ignorance or fraudulent avarice. It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines, or other substances used therapeutically."

No effective work in the propaganda for reform in Proprietary Medicines was done, however, until the creation of the Council on Pharmacy and Chemistry in the American Medical Association in February, 1905. This Council has rendered, and will continue to render, most meritorious services to the cause of humanity. To show the enormity of the traffic and corresponding dangers, the following statement (the data to December 31st, 1900, having been originally collected for my "Oration on State Medicine," delivered before the American Medical Association June 8th, 1901) is herewith presented.

Patents issued by the United States Patent Office:

	To December 31, 1900.	From January 1, 1901, to October 31, 1908.
Disinfectants	321	202
Extracts	250	65
Hair dyes and tonics	48	7
Insecticides	180	64
Internal remedies	376	58
Plasters	56	19
Topical remedies	371	35
Veterinary	78	10
	1680	460

Trade marks issued:

Drugs and chemicals	319
Medical compounds	5974

Under date of November 17th, 1908, the Commissioner of Patents informs me that trademarks have been reclassified, and since January 1st, 1901, there have been issued in sub class No. 6, Chemicals, Medicines and Pharmaceutical Preparations, approximately 2,105 trademarks. This means that up to October 31st, 1908, the office has issued 2,140 patents and 8,398 trademarks on drugs, chemicals and medical compounds.

By the term patent medicine as properly employed, it must be understood that the composition is known and can be seen at the Patent Office. The proprietary medicine is a secret preparation protected by a trademark and hence preferred by the owner, but both are vaguely termed by the public patent medicines.

The proprietary medicines are subject to the control of the State authorities and, if containing alcohol in sufficient quantity to be intoxicants, are subject to internal revenue laws. But up to the enactment of the Pure Food and Drugs Law, June 30, 1906, nothing was done to control the sale of secret remedies and medicinal preparations containing habit-forming drugs, the composition of which need not even be disclosed to the patent office.

Fortunately, Section 8 of the Act referred to provides that an article shall be deemed to be misbranded * * * if the package fails to bear a statement on the label of the quantity or proportion of any alcohol, morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate or acetanilid or any derivative or preparation of any such substances contained therein. In consequence of this very wise provision of the law we are now enabled to estimate the enormity of the harm which must inevitably result from promiscuous use of such preparations.

A most excellent report on "Secret Drugs, Cures and Foods" was presented by Special Commissioner Octavius C. Beale to the Parliament of the Commonwealth of Australia, August 8, 1907, in which he discusses the subject under six headings, viz.: Prevention of Conception and Feticide; 2. Infanticide and Infantile Mortality; 3. Injury and Death to the Adolescent; 4. Injury and Death to Adults; 5. Advertisements; 6. Legislation. In view of the importance of the subject, it is deemed desirable to present here a brief summary of the most important facts collected by this painstaking investigator, not only in Australia, but also in the United States, Canada, Great Britain, Germany and France.

Prevention of Conception and Feticide—Regulation of Families.

In this section Commissioner Beale writes: "The practice of interference with the sexual function is so common and the knowledge of it so universal that it would be thinnest hypocrisy upon the part of any grown person to pretend that modesty may be shocked at considering its causes and consequences. The disastrous effects upon men and women are set forth in plain and decent language in the Report of the New South Wales Royal Commission upon the decline in birth rate and upon mortality of children, which it would be well to reproduce by another inquiry over a wider sphere, or indeed merely to reprint for broadest distribution. Just because deception and falsehood are widespread there is occasion to confront them by candid truth. * * * Before me is a copy of the second volume * * * there upon page after page are photographs of the advertisements of obscene creatures who corrupt society at its core and live like larve upon their own poison and the corruption it causes. The announcements appear today just as before, only more of them. To debauch and degrade humanity is a profitable trade. On those pages are also photographs of numbers of preparations to prevent births, of contrivances towards obscene practices. * * * There is only one remedy—morality by Act of Parliament, enforced by severe penalties. * * * No attempt will be made to give a comprehensive statement of the means adopted to induce miscarriage. The unnatural practice is assisted by the free sale of drugs, often at exorbitant prices, under proprietary names. These are openly advertised in Anglo-Saxon countries, which differ therein from one another only in degree, the names and descriptions of the drugs being well understood by dealers and users."

In order amply to elucidate the subject of criminal abortion by drugs, Mr. Beale quotes the following extract from Taylor's "Medical Jurisprudence," Vol. II, pages 166, et seq.: "The following generalization, which is strictly warranted by facts, conveys a warning to would-be abortionists, whether professional or habitual, or lay and occasional. There is no drug, and no combination of drugs, which will, when taken by the mouth, cause a healthy uterus to empty itself, unless it be given in doses sufficiently large to seriously endanger by poisoning the life of the woman who takes it."

In this country, as explained by Dr. Kebler, the publication of advertising matter inviting attention to means whereby conception can be prevented or abortion produced is specifically prohibited by law. In order to circumvent the law, however, the advertising literature is so framed as to clearly indicate the purpose for which the preparation is intended, such as "French Female Pills, a safe, certain relief for suppressed menstruation. Never known to fail. Safe, sure, speedy," etc.

Vital statistics show that the birth rate in England has dropped from 34.3 per 1,000 in 1878 to 28 per 1,000 in 1901; in South Australia from 39 in 1885 to 24 in 1906; in Germany from 40.4 in 1881 to 35.3 in 1894. The great decline in the birth rate in France has been a matter of much comment, and the latest statistics show little or no increase in the French population. The birth rate of Paris, already low in 1881, has further declined from 23.3 to 16.6 in 1894. We have no reliable birth rates for the United States as a whole. The census statistics of 1900 show that the birth rate has increased from 26.9 in 1890 to 27.2 per 1,000 of the mean population in 1900. Harrington, in speaking of the decline in birth rates in foreign countries says among the descendants of the original colonists and earlier immigrants the same decline is most evident. * * * In Massachusetts the statistics of 1898 show that the greatest proportion of the number of births belongs to the foreign born, the children of native parentage on both sides representing 32.36, those of mixed parentage 19.42 and those of foreign-born parentage 48.22 per cent of the total births. The crude birth rate was 27.37."

Mr. Roosevelt is quoted to have said that "there are fewer descendants of the Revolutionary forefathers living today than there were fifty years ago. We must either alter our ways or we must make way for the other races, Asiatic or whatever they are, that will certainly replace us." Every thoughtful physician and layman realizes that the declining birth rates are chiefly the effects of vice, unnatural interference and actual homicide.

Dr. H. S. Pomeroy of Boston over twenty years ago presented the moral, social and medical aspects of prevention in his book, "The Ethics of Marriage," which evoked the unqualified approval of the late Mr. W. E. Gladstone. The President of the United States has uttered notes of warning on the "race suicide problem," and Professor Emmet, the eminent gynecologist, asks: "Can anyone accustomed to treating the diseases of women say in truth the statement is exaggerated that we can see on any one day more sorrow and misery resulting from the abuse of the married state than would be found in a month from uncomplicated child bearing?"

Dr. Kebler has furnished me with a list of 51 so-called female pills or regulators advertised in this country (see appendix). While quite a number may act as abortifacients, the majority are worthless and frauds pure and simple. Among a number of fraud orders issued by the Postmaster General during the past two years the following transcript from the records of the Assistant Attorney-General's office, submitted May 29th, 1908, in the case of Mrs. A. Kirk and the Reliable Remedy Company, 2317 Brooklyn avenue and 18th and Grove streets, Kansas City, Mo., will be of interest: "It will be remembered that on October 29th, 1907, a fraud order was issued against the Dr. Price Remedy Co., its officers and agents as such, and Mrs. J. Linson and Mrs. A. Miller, 2904 Woodland avenue, Kansas City, Mo. The scheme against which the order was directed was conducted by a man by the name of Arthur P. Miller and involved the sale through the mails, by means of advertisements in newspapers and circulars, of pills for women to act as abortifacients, which pills in fact were worthless for the purpose, as was well known to Miller. Miller was indicted Nov. 5, 1907, in connection with the above case and on the following day he entered a plea of guilty and was sentenced to a term of six months in the Bates County Jail at Butler, Mo., and to pay the costs of the prosecution.

"A report has now been received from the Inspector at Kansas City, Mo., that Miller, as soon as the fraud order was issued October 29th, moved his desk into the real estate office of a man by the name of William Abel, 18th and Grove streets, Kansas City, Mo., where the two continued the business until Miller pleaded guilty, and that during the time he was serving the sentence his wife conducted the business for him with Abel. * * * In order to receive the mail, these parties advertised under the fictitious names of Mrs. A. Kirk, 2317 Brooklyn avenue, which is the residence of Abel and Miller, and to those persons who replied to their advertisements they sent circulars under the name of Reliable Remedy Co., 18th and Grove streets, which was the office of Abel, in which circulars the addressee was solicited to remit $2.00 for pills, which were described in language calculated to cause the reader to believe they would act as abortifacients. * * * The Inspector says that about 25 letters are being received daily by those persons in connection with the scheme.

"The Inspector states that he presented the above facts to the United States Attorney, who caused the matter to be presented to the grand jury, which returned an indictment against both Miller and Abel on May 5th, to which indictments these parties have entered a plea of not guilty and gave bond of $1,000 each to stand trial. * * * Fraud Order issued May 29th, 1908. Abel was sentenced September, 1908, to pay $25 and costs."

INFANTICIDE BY SYSTEMATIC DRUGGING OF CHILDREN.

In discussing the subject of infant mortality in relation to the occupation of women, the influence of ignorance and poverty has been emphasized, and we quoted Sir John Simon, on p. 68,* to the effect that "infants who should be at the breast are improperly fed or starved, or have their cries of hunger and distress quieted by those various fatal opiates which are in such request at the centers of our manufacturing industry." We have also referred to the injury done by abnormal cow's milk and the injurious quality of certain proprietary and other artificial foods. But when we contemplate the frightful mortality in illegitimate children, and of the still births, especially in illegitimate offsprings, we may well apprehend that this extraordinary destruction of life is induced not only by ignorance or poverty, but also by crime.

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*Kober's "Industrial Hygiene."

Of the 66,808 births in Washington from 1879-95, 37,781 were white and 29,127 colored, with 1,136 illegitimate births in the white race and 6,706 in the colored element. Of the 7,249 still births in this city during the same period 2,750 were white and 4,449 were colored; of this number 2,053 were illegitimate, 307 or 15.1 per cent were white and 1,746 or 84.9 per cent were colored.

In this connection it is desirable to point out the serious consequences of the systematic drugging of children by "Soothing Syrups," "Teething Syrups," "Children's Comfort," "The Infant's Friend," etc. Dr. Kebler has furnished me with a list of six such compounds, all containing opium or morphine, not to mention the numerous cough and croup remedies in the market. Nearly every one is familiar with Mrs. Winslow's Soothing Syrup, it contains morphine; so does Dr. Fahrney's Teething Syrup, for, according to Dr. Kebler, the label declares each ounce contains alcohol 9%, morphine 1/7 grain, chloroform 2/3 min., combined with seven other articles. "For babes. A sure remedy for all ailments incident to babes from one day old to two or three years * * * contains nothing injurious to the youngest babe and if given in proper dose will always relieve." Elsewhere upon the label occurs the following statement: "Mothers need not fear giving this medicine to the youngest babe, as no bad results come from the continued use of it. Many children have taken two and three dozen bottles and today are hale and hearty boys and girls." This language shows on the face of it that the manufacturer knows full well that the drug is dangerous. It should be known that children are especially susceptible to the toxic effects of opium and its preparations. In December, 1905, a Coroner's Jury in Baltimore warned the public not to use "Kopp's Baby Friend" on account of the death of a white infant, aged 3 months and 14 days, who had been given this preparation by his mother while suffering from indigestion. The evidence at the inquest, according to the District Attorney, showed that not only this child, but probably three others in the neighborhood, had died recently from the use of patent medicines administered to them. The "Journal of the American Medical Association," February 9th, 1907, reports the death of twin children 6 weeks old in New Castle, Penna., caused, according to Drs. Cooper and Warner, by "Kopp's Baby

Friend." The parents gave it according to the directions accompanying the bottle; six drops every two or three hours to keep the infant from crying. The children were not sick; they lived about one day after beginning to take the medicine. When Dr. Warner, the attending physician, saw them, they were in the last stage of opium poisoning. They had not been given any other medicine." In the same issue of the "Journal" are the reports of the death of a child aged 10 months from Mrs. Winslow's Soothing Syrup, another death in a child from the effects of "Monell's Teething Syrup" and still another from the effects of "Rex Cough Syrup." Space will not permit the presentation of other cases or to point out the extreme danger which lurks in many of the Cough, Colic and Diarrhea mixtures and other proprietary remedies which have killed children and adults and yet are unblushingly advertised as safe and harmless for Babes.

Every one at all familiar with the subject knows how frequently nurses have to be discharged for "doping" infants, and the fact that 44 children under 5 years of age have perished in this city during the last 10 years from accidental poisoning is sufficient indication of the dangers attending the promiscuous use of poisonous drugs.

DIPHTHERIA CURES.

Dr. Kebler has furnished a list of ten advertised diphtheria cures. In view of the fact that diphtheria antitoxin is the only reliable remedy in this disease, there can be no question that recourse to advertised cures is fraught with danger to the child. The death rate from Diphtheria and Croup in 1890 was 97.7 per 100,000, in 1900 it was only 45.2, a decrease of 52.5%. This splendid gain is almost entirely due to the use of antitoxin. The average diphtheria mortality where antitoxin was used in 1902 was 6.48% and where not used it was 32.5%. The earlier the antitoxin is employed the lower are the death rates. The mortality in children when used upon the first day was 1.45%, but when used later than the fourth day it rose to 14.49%.

Advertised Diphtheria Cures.

Hesperian Tonic, Dr. J. W. Roberts. Cure for Diphtheria, etc.
Humbug Oil. Cures Diphtheria.
Colwell's Egyptian Oil. Dr. Colwell's Magic Egyptian Oil, cures diphtheria, etc.
Hamlin's Wizard Oil. Cures rheumatism, diphtheria, etc.
Dr. Winchell's Teething Syrup. A certain preventive of diphtheria.
Wizard Oil.
Dr. Shoop's Diphtheria Remedy. For the relief and cure of diphtheria.
Gar-Gol. An absolute specific * * * for all kinds of sore throat. Preventive of diphtheria.
Indian Rattle Snake Oil. We guarantee a cure for * * * diphtheria and catarrh.
Vapo-Cresoline. "Cures while you sleep" whooping cough, * * * diphtheria, catarrh."

INJURY AND DEATH TO THE ADOLESCENT.

In this section Mr. Beale considers the exposure of the young to demoralization and even to debauchery by (a) the sale of intoxicants known as bracers—which are disguised alcoholics; (b) by preparations of cocaine, of acetanilid, of sulfonal and other synthetic depressants of opium (to a much less extent); (c) by compounded drugs supposed to excite sexual desire; (d) by preparations intended to prevent conception or to induce abortion; and finally (e) by the sale of certain things manufactured in Europe, which are designed and sold for the sole purpose of nameless and unnnatural vices.

The subject of "bracers" has already been discussed in connection with the alcohol habit. Those desiring additional information as to their general composition and effects, not infrequently seen in innocent women and clergymen, can do so by consulting the pages of "Collier's Weekly" for October, 1905, or Mr. Beale's report, pp. 90-94. Dr. J. D. Morgan informs me of a recent case of alcoholic multiple neuritis in a most estimable lady who had taken Peruna as a tonic.

We have already discussed the cocaine and drug habit and the shameful traffic in lost manhood restorers on pages 127, 133 and 178.

It is impossible, in the scope of this article, to give an adequate conception of the enormity of the nostrum evil. Some idea may be formed by a perusal of the 431 pages of Mr. Beale's Report and an inspection of the storerooms of the Division of Drugs of the Bureau of Chemistry, U. S. Dept. of Agriculture, where thousands of preparations may be found, not one-tenth of which have been analyzed for lack of laboratory force. And yet the end is not in sight, but the supply is increased, as will be seen by reference to the statistics of the Patent Office, p. 193, at the rate of about 200 a year. "A most able and veracious physician has truly asserted that quackery has destroyed more in this country (Great Britain) than the sword, famine and pestilence united," and never was there a period in the history of British medicine at which the force and truth of this opinion was more obvious than at this day." (Cited by Beale from the "Lancet," London, June, 1906, p. 1886.) The Standard Dictionary defines a Quack as a pretender and quotes the following: "South Sermons Vol. II Sermon XXX, p. 133, 'Quacks and mountebanks are doubtless a very dangerous sort of men—they are both of them always very large in pretense and promise, but short in performance and generally fatal in their practice." Dr. M. A. Clark, in a recent article on Quacks,* quotes Steele in his "Spectator" of July, 1712, as saying: "Quack doctors who publish their great abilities in little green billets, distributed to all who pass by, are to a man impostors and murderers," and adds: "I doubt not but that the editors of our great newspapers of today would voice the same sentiment, and yet we find these journals full of advertisements of quacks and quack medicines."

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*"Atlanta Journal Record of Medicine," October, 1908.

Consumption Cures.

Dr. Kebler has furnished me with a list of 35 remedies advertised for the prevention and cure of Consumption. Many of these preparations contain drugs which enslave, but the chief transgression lies not as much in their composition "as in the fraudulent methods used in their exploitation, such as symptom blanks and mystic and misleading statements and false claims made in the advertising literature." The Medical Profession knows that there is no specific remedy for the disease in any of its stages, it is also well known that no germicide, whether taken internally or inhaled, which would kill the tubercle bacilli, could be administered without serious danger to the patient. It is also well known that good food, pure air and a rational hygienic regimen offer the best chances for recovery, and that patients who resort to all sorts of quack remedies in the early stages of the disease deprive themselves of the most favorable opportunity for a permanent cure. It is true the excuse given by many is inability to pay a doctor or druggist, but, as a matter of fact, no person belonging to the dependent classes need ever go without the most skilled medical care and treatment in connection with our dispensaries and hospitals. I have never known a reputable physician to decline to lend a helping hand in directing such patients into the proper channels. One of the interesting features in connection with the alleged consumption cures is that special attention is given to the dietetic and hygienic regimen, which is, after all, the fundamental basis of success, and can be had free as a matter of public education. Among the remedies extensively advertised is "Tuberculozyne," which is claimed as having killed the consumption germs, and that all trace of the disease in blood and tissue was destroyed." Dr. Kebler might have added "Liquozone," which in addition to consumption is alleged to be a cure for 36 other diseases from Asthma down to Tumors and Ulcers.

Dr. Kebler's list of remedies advertised for the prevention or cure of consumption is as follows:

Acker's English Remedy. (?)
Allen's Lung Balsam. (?)
Ayer's Cherry Pectoral.
Ballard's Horehound Syrup.
Birch Mountain Tea.
Chamberlain's Cough Remedy.
Dr. Bull's Cough Syrup.
Eckman's Alterative.
Elchert's Cold and Consumption Cure.
Father John's Medicine.
Foley's Honey and Tar.
Fournier's Throat and Lung Remedy.
Germicidal Vapor Inhalation Treatment.
    Dr. Anderson.

H and N Consumption Cure.
Hickory Bark Cough Remedy.
Hoff's Consumption Cure.
Dr. King's New Discovery.
Lung-Germine.
Mrs. Wesley Magg's Consumption Cure.
Mizpah Cure.
Peruna.
Phoric Electric Method.
Piso's Cure.
Richardson's E Z Lung Tonic.
Roger's Compound Syrup of Liverwort, Tar and Canahalagua.
Severas Lung Balsam. (?)
Shiloh's Consumption Cure.
Dr. Stevens' East India Consumption Cure.
Tuberculoids.
Vanderpool's Consumption Cure.
Victor's Lung Syrup. (?)
Vinol.
Virgin Oil of Pine. Leach Chemical Co.
Wilson's Preparation of Hypophosphites and Blodgetti.
Yonkerman Consumption Cure, "Tuberculozyne."

ASTHMA AND HAY FEVER CURES.

The following is Dr. Kebler's account of this class of secret remedies:

"These nostrums are usually sold over the counter. A few of them, however, can only be obtained from the producer direct. As an example of the latter class may be mentioned Tucker's Asthma Specific. This preparation, which is widely advertised throughout the country and enjoys a large sale, consists of a small bottle of medicine and a spray atomizer. The price of the 'treatment' is $12.50. Analysis of a sample of the medicine disclosed the presence of cocaine. The remedy should therefore be a good 'repeater.' Additional supplies of the inhalant can be obtained from the producer upon payment of $1.00 per ounce. Some asthma cures are sold by the producer only after preliminary correspondence and the use of 'symptom blanks,' as in case of cancer cures. Hayes' Asthma Cure belongs to this class.

"The remedies themselves may in general be divided into three classes: medicines intended to be taken internally, medicines intended to be taken by inhalation and medicines intended to be burned and inhaled. The preparation known as Davis' Liquid Asthma Remedy is an interesting example of remedies belonging to first of these classes. According to the statement which appears upon the label, the product contains over five grains of chloral hydrate to the dose. The directions state that it should be taken 'one tablespoonful 20 minutes after meals, at bedtime and on arising in the morning.' 'Adults can repeat dose every two hours.' 'Dose can be increased or diminished, or taken oftener if needed.' The statement also appears that it 'keeps you from having asthma.' The danger of the formation of the chloral habit through the use of such a preparation is apparent.

"Following is a list of remedies belonging to the general class of asthma cures:

Himalaya Asthma Cure.
Hart's Swedish Asthma and Hay Fever Cure.
Haylene.
Dr. Olin's Asthma Cure.
Dr. R. Schiffmann's German Asthma Cure.
Green Mountain Asthma Cure.
Papham Asthma Specific.
Dr. Olin's Hay Fever Cure.
Dr. J. R. Stafford's Olive Tar.
Himrod's Asthma Cure.
Milk Emulsion.
Tucker's Asthma Specific.
Brater's Asthma Cure.
Dr. B. W. Hair's Asthma Cure.
Bryan's Imperial Asthma Cure.
Taft's Asthma Cure.
Ballard's Horehound Syrup.
Japanese Oil.
Severa's Lung Balsam.
Davis' Liquid Asthma Remedy.
Davis' Asthma Powder.
Warner's Safe Asthma Cure.
Asthma Cura.
Birch Mountain Tea.
Chilean Asthma Cure.
Frontier Asthma Cure.
Hayes' Asthma Cure.
Upham's Asthma Cure.
Ascatco.
Asthma Cure. Frank Wetzel, M. D.
William's Asthma Cure.
Renacol."

Catarrh Cures.

According to Dr. Kebler:

"Nostrums belonging to this class are usually intended for local application to the nose or throat and are generally prepared in the form of powder (or 'snuff'), ointment (or 'jelly'), or in stick form for inhalation. In addition, there are liquids intended for use as spray or douche. When the 'cure' rises to the dignity of a 'treatment,' a 'constitutional' or 'blood' medicine is usually added, as in case of 'Gauss' Combined Treatment,' 'Dr. T. F. William's Treatment,' etc. The catarrh jellies, catarrh powders and catarrh cures generally are usually sold over the counter, but the 'treatments' are furnished upon application to the advertiser direct. The initial advertisement generally contains an offer of free trial treatment or a free book upon the subject of catarrh, in return for the reader's name and address. Accompanying the book or the trial treatment are numerous testimonials and other advertising literature intended to interest the correspondent and secure a sale of the remedy. It is possible that some of these preparations do good in chronic nasal catarrh in a palliative way through a cleansing or antiseptic effect, but none of them can possibly make good the extravagant claims made for them with regard to the cure of the disease.

"A list of preparations belonging to the general class of 'Catarrh Cures' is given below:

Bunsen's Catarrh Cure.
Crown Catarrh Powder.
Catarrh Powder, Britt, Loeffler & Weil, New York.
Tousley's Sneezeless Snuff.
Dr. A. W. Chase's Catarrh Powder.
Old Saul's Catarrh Cure.
Hall's Catarrh Cure.
Gauss' Combined Catarrh Cure.
Century Catarrh Cure.
Ozojell.
Nosena.

Dr. Olin's Catarrh Cure.
Catarrh Balm.
Sanford's Radical Cure for Catarrh.
Century Catarrh Cure.
Pond's Extract Catarrh Cure.
I. C. R. Instant Catarrh Relief.
Ely's Liquid Cream Balm.
Dr. Agnew's Catarrh Powder.
Allan's Catarrh Cream.
Biel's Catarrh Jelly.
Dr. Slack's Mexican Ointment.
Milk's Catarrh Cure.
Kondon's Catarrhal Jelly.
Cole's Catarrh Cure.
Dr. Birney's Catarrhal Powder.
Thymo Catarrh Balm.
Premium Prescription.
Bear's Catarrh Remedy.
Dr. Evory's Diamond Catarrh Remedy.
London Catarrh Cure. London Balm.
Hering's Vegetable Specific Catarrh Cure.
Pollantin Powder for Catarrh.
Paracamph.
Dr. Syke's Sure Cure for Catarrh.
Ka-ton-ka.
Branaman's Catarrh Cure.
McCode Catarrh Cure.
Sproule's Catarrh Cure.
Botanic Blood Balm. B.B.B.
Mederine.
Grove's New Discovery for Catarrh.
Dr. Shoop's Catarrh Remedy.
Mucu-Tone.
California Mineral Crystals.
Hyomei.
Davis' Oil.
Dr. Blosser's Catarrh Cure.
Catarrh Cure. Dr. W. O. Coffee.
Microcide.
Dr. W. H. Long's Great Mountain Moss Catarrh Jelly.
Adlyne Catarrh Treatment.
Blackburn's Victory Catarrh Tablets."

SKIN CURES.

Dr. Kebler divides nostrums advertised for this purpose into two classes: "First, those which are claimed to cure skin diseases, like eczema, parasitic skin affections, etc; and, second, the products which are claimed to be efficacious in the prevention and cure of less serious skin affections, such as erythema, pimples, and black-heads. They are advertised to prevent and remove wrinkles from the faces of persons of any age; to impart youthful properties to the skin, making it 'clear, soft and velvety'; and to remove completely and permanently all facial blemishes, pimples, black-heads, freckles, tan, sunburn, sallowness, etc. It is claimed in most cases that they accomplish these results through a nourishing effect upon the skin, 'feeding the skin through and through.' For this reason they are often called 'skin-foods.' They are analogous to 'nerve foods,' 'brain foods,' etc. With regard to this use of the word 'food' in connection with the names of medicinal preparations, it may be well to recall the charge to the jury in the recent case of the United States vs. R. N. Harper, see p. 191.

"Following is a list of the remedies belonging to the general class of skin cures:

Med-Aseptic Cold Cream Skin Food.
Riker's Violet Cerate Skin Food.
Hudnutine Toilet Cerate (Skin Food).
Marvelous Cold Cream Skin Food.
Excelsior Skin Food.
Kingsbury's Velvet Skin Food.
De Meridor Granulus Cold Cream Skin Food.
Acme Tablets. Dermol.
Cuticura Soap.
Cuticura Ointment.
Cuticura Resolvent.
W. W. W. Wood's Ointment.
Pompeian Massage Cream and Skin Food.
D. D. D. Remedy for eczema, etc.

Sartoin Skin Food.
Epp-O-Tone Skin Food.
Cre-Mo-Jel.
Wisdom's Rubertim (Skin Food).
Poslam.
Palmer's Vegetable Cosmetic Lotion.
Zema-Cura.
Dr. Agnew's Ointment.
Perfect Cold Cream Skin Food.
Satin Skin Cream and Skin Food.
Red Cross Skin Food.
C. C. C. Eczema Cure.
Dr. Campbell's Arsenic Complexion Wafers.
Crane's Eczema Cure.
Para-camph.
Rexall. Cream of Almonds.
Sempre Giovine. Skin Food.
Laird's Bloom of Youth.
Mme. Hayden's Skin Food.
Parisian Electro Skin Food.
Kintho Beauty Cream.
Aughinbaugh's Cold Cream. Skin Food.
Eureka Complexion Tablets.
Nadinola.
Gourand's Oriental Cream.
Lait Antiphenique.

RHEUMATISM CURES.

The following is an extract from Dr. Kebler's article on Nostrums and fraudulent methods of exploitation:*

"MAGIC FOOT DRAFTS.

"The following are quotations from the literature:

> Magic Foot Drafts are known all over the world as the safest, surest and simplest cure for all kinds of rheumatism. They cure when everything else fails. Best of all, they cure to stay cured. * * * If 100,000 people from every State and Kingdom of the earth have been cured of rheumatism, of every kind and from whatever cause, by Magic Foot Drafts, can any prejudice exist in your mind to prevent your giving the remedy a fair trial?

"No one reading these quotations can arrive at any other conclusion but that 'Magic Food Drafts' are capable of curing all forms of rheumatism. 'Magic Foot Drafts' consist of pieces of oil cloth, covered on the unfinished side, with a border of adhesive mixture, and the central portion with a plaster composed of the following:

Poke root	30 per cent.
Pine tar	62 per cent.
Corn meal	8 per cent.

"These drafts are to be applied to the hollow of the soles of the feet and are claimed to effect cures in the following manner:

> By cutaneous absorption curative elements are taken from the draft. These are carried to the blood by the lymphatics, and neutralize the poisons. * * * It (Magic Foot Draft) stimulates the nerves to activity. The nerves in turn act on the muscles, veins and arteries, increasing the circulation of the blood, compelling it to hasten and deliver up its poisons from the whole system to the sweat glands just beneath the skin, and from thence it is drawn by the Draft through the pores and absorbed. Thus is effected a cure, no matter where the pain is located, because all the blood of the body passed through the capillaries.

"There is nothing whatever in these drafts to warrant such claims and representations. They possess no curative element whatever, which when absorbed into the blood will neutralize the poisons which are supposed to be the cause of the rheumatism and in this manner effect a cure.

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*"Journal Am. Med. Association," Novbr. 10 and 17, 1906.

"A particularly interesting feature connected with this scheme is that the promoters when asked for reasons for their claims drew on the writings of the best authors of the country, such as the late J. M. Da Costa, Dr. H. C. Wood, Dr. J. V. Shoemaker, Dr. H. A. Hare, the medical author of the 'American Dispensary,' and others. These authors, when informed relative to the use made of their writings, vigorously protested, claiming that any interpretation of their writings which would in any way bolster up the schemes of the 'Magic Foot Draft' was absolutely unjustifiable."

The following lists have been supplied by Dr. Kebler:

Rheumatism Cures.

Kennedy's East Indian Bitters.
Nature's Oil.
Kelly's Rheumatic Syrup.
Warner's Safe Rheumatism Cure.
T. Rheumatic Cure. The Great Blood Purifier.
Athlophorus.
Griffith's Compound Mixture of Guaiac, etc.
Dr. Olin's Rheumatic Cure.
Dr. MacDonald's Atlas Compound. Specific No. 18.
Fulton's Renal Compound.
Silodyne.
R. R. R. Radway's Ready Relief.
Dr. Shoop's Rheumatic Remedy.
Wright's Instant Relief.
Japanese Oil.
St. Jacob's Oil.
Mysterious Pain Cure.
Hamlin's Wizard Oil.
Denver Mud.
Albert's Remedy. Cure for Rheumatism, etc.
Anchor Pain Dispeller. Toxol.
Rexall Rheumatic Cure.
Dr. Slack's Mexican Ointment.
Dr. McConkey's Vigor of Life.
Bogle's Quaker Balm.
Celestial Oil.
Dr. Radcliffe's Great Remedy Seven Seals.
Dr. Kilmer's W. O. Ointment.
Fenner's Kidney and Backache Cure.
Pain Balm.
White's Wonder Worker Herbs.
A. D. S. Rheumatism Cure.
Griswold's X-ray Pain Killer.
Dr. Bell's Anti Pain.
Schrage's Rheumatic Cure.
Wood's Rheumatism Cure.
Ka-Ton-Ka.
Reagan's Positive Cure for Rheumatism and Asthma.
The Wonderful Wintergreen. Great Rheumatic Cure.
Rheumetts. Etts warranted cure for rheumatism.
Bi-Lo-Zone.
Volta Powder.
Quinine Whisky.
Lane's Rheumatic Cure.

Kidney and Bladder Cures.

Dr. Gossom's Kidney and Bladder Cure. A specific for Bright's Disease.
Bick's Laxative Kidney and Liver Tablets. Cures Kidney and Liver troubles in all its forms.
Bick's Kidney Pills.
Brown's Compound Concentrated Fluid Extract of Buchu.
Zoeller's Kidney Remedy. (Formerly Black Gin.)
Warner's Safe Kidney and Liver Cure.
Alma-Bromo.
Warner's Safe Diabetes Cure.
Palmetto Berry Wine with Asparagus Wine.
A Texas Wonder. Hall's Great Discovery. Removes Gravel.
Marsh Root. Kidney and Liver Cure.
Rexall Kidney Cure.

National Kidney and Liver Cure.
Jay Neway's Kidney and Liver Remedy.
McBurney's Kidney, Bladder and Rheumatism Cure.
Welch's Aegopodium.
Mother Gray's Australian Leaf.
Dr. Olin's Kidney Cure.
O. K. Specific.
Dr. Maid's Celebrated Liver and Kidney Tablets.
Dr. Kilmer's Swamp Root.
Dr. Swan's Celebrated Liver and Kidney Cure.
Chewalla.
Dr. Hobb's Asparagus Kidney Pills.
Dr. Bell's Kidney Pills.
Crane's Kidney and Backache Cure.
Begg's Blood Purifier.
Allan's Kidney and Liver Cure.
Dodd's Kidney Pills.
Our Own Kidney and Liver Cure. Certain Cure of Bright's Disease.
Kidneyetts. Etts warranted cure for kidney and all urinary diseases.
Bouvier's Buchu Gin for the kidneys and bladder.
Dr. Hubbard's Kidney and Bladder Capsules.
Doan's Backache Kidney Pills.
Var's American Kidney Pills.
Fitch's Kidney and Liver Cooler.
Munyon's Kidney Cure.

Cancer Cures.

The following is Dr. Kebler's account of the method employed by the sure cure school in incurable diseases. Additional information on this subject will be found in "Collier's Weekly," July 14, 1906:

"The initial step in the sale of these nostrums is usually the publication in the newspapers of an advertisement inviting attention to a certain and speedy cure for cancer. Following is an illustration: 'I have proven Cancer Can Be Cured At Home. No Pain. No Plaster. No Knife. I have discovered a new and seemingly unfailing remedy for the deadly cancer. I have made most astonishing cures. I believe every person with cancer should know of this marvellous medicine and its wonderful cures, and I will be glad to give full information free to all who write me and tell me about their case.' Those who seek further information in response to such advertisements receive in reply a stock written letter, shrewdly devised so as to give the impression that the communication is a personal one. Accompanying this is a 'symptom blank,' which the prospective purchaser is requested to fill out, and printed matter, including numerous testimonials, all setting forth the claim that the remedy in question is a certain, speedy and painless cure for cancer. If there is delay in ordering the remedy, the inquirer becomes the recipient of letter after letter in which the attempt is made in every conceivable way to cajole him into purchasing the 'cure.' The cost of the treatment is from $15 to $25 per month, some concerns charging more than others. The sufferer is therefore obliged at the outset to part with a considerable sum of money before he receives the first supply of 'treatment.' The result is invariably keen disappointment on the part of the victim. The 'treatment' consists of tonic and alterative remedies for internal use and simple applications for use upon the skin. They are indeed painless in most cases and are utterly worthless so far as the permanent eradication of cancer is concerned. Following is a list of concerns engaged in the sale of remedies which are claimed to cure cancer:"

Dr. Bye, Kansas City, Mo.
Dr. Curry Cancer Cure, Lebanon, Ohio.
C. Gee Wo Chinese Medicine Co., Portland, Oregon.
Indian Black Vegetable Salve & Remedies Co., Brooklyn, N. Y.
Dr. Johnson Remedy Co., Kansas City, Mo.
Dr. L. T. Leach, Indianapolis, Ind.
Mason Cancer Institute, 1700-8 Broadway, New York.
Dr. Mixer, Hastings, Mich.
D. Needham's Sons, Chicago, Illinois.
Radio-Sulpho Co., Denver, Colo.
E. E. Sonanstine, M. D., Colorado Springs, Colo.
Dr. Rupert Wells, St. Louis, Mo.
C. Henry Wilson, M. D., Brooklyn, N. Y.

Epilepsy Cures.

The methods employed by individuals, institutes or firms who prey upon this unfortunate class of patients are manifold and can best be judged by an extract of a Brief submitted by Assistant Attorney General Goodwin to the Postmaster General, dated July 23rd, 1908, and which is as follows:

"*In re* The Epileptic Institute Company and the Epileptic Institute and their Officers and Agents as such at Cincinnati, Ohio, and Dr. H. J. Luecke at P. O. Box No. 99, Cincinnati, Ohio.

"On June 6th last this concern was cited to show cause why a fraud order should not be issued against it. * * * The facts of this matter as I find them to be are substantially as follows: This business consists of a medical treatment by mail of the disease of epilepsy. One Otto Kalmus, a resident of Cincinnati, commenced the business in the spring of 1903 under the name of Epileptic Institute, and so continued until July, 1907, when he incorporated it under the name of 'The Epileptic Institute Company,' he continuing as president and general manager and principal owner. As a private address for patients, who it was explained might not care to have it known that they were corresponding with an epileptic institute, use has been made of the name of Dr. H. J. Luecke, a physician connected until recently with the institute. While not with the institute since last November, Mr. Pyle and Dr. Schoenling explained at the hearing that by agreement with Dr. Luecke his name has continued to be used and that the institute receives that mail addressed to him which is also directed to Box No. 99 in the Cincinnati Post Office.

"Until lately communication with epileptics was obtained through advertisements in newspapers, chiefly those circulated among Germans and other foreigners. * * *

"More recently the practice has obtained of purchasing the names and addresses of epileptics from, as the Inspector says, 'other concerns' that have obtained all of the money possible from such unfortunates without affecting a cure and then mailing circulars to such persons, urging them to take treatment from the institute. * * * The samples of these circulars are among the papers. They are filled with highly colored and extravagant representations with reference to the unprecendented success of the institute treatment which it denominates the 'Schonka' treatment as a cure for epilepsy; and among other things, it is represented that this treatment is original with the Institute and by its means the Institute can successfully treat the heretofore considered incurable disease epilepsy, and in many cases effect a cure; that the treatment is something not known to medical science and is different from anything used by the profession in such cases, that the physicians of the institute are skilled and experienced specialists and include 'one of the foremost examining specialists in America, etc.'

"The time that this institute urges its patients to continue the treatment is from a year to a year and a half, and longer, varying, of course, in different cases. Its charge for medicine ranges from about $3.00 to $9.00 a month, the variance depending, it seems, upon the amount which the patient can be induced to pay."

Here follow ten pages of evidence. The report, on page 13, states: "The medical treatment so glowingly advertised by this institute as a 'cure' for epilepsy is based on the bromides. It is what in general is known as the bromide treatment. Except, and this is where the institute rests its claims for unusual and peculiar efficacy, that the drug Adonis Vernalis is used in conjunction with the bromides. In connection with the medical treatment the usual and ordinary rules regarding diet, hygiene, etc., are also given. Dr. L. F. Kebler, Chief of Drug Laboratory Bureau of Chemistry, U. S. Department of Agriculture, informed the Assistant Attorney General 'that what is in general known as the Bromide Treatment is in common use by the profession in treating epilepsy, that its physiological action has been quite well defined, that it is not a "cure" for the disease, but acts simply as a sedative, and in this way tends to suppress the attacks; that medical science today has no drug treatment that will cure this disease; that the disease is among the most difficult and intractable of all diseases to treat and that a small per cent of the more favorable cases only have been successfully treated and that the success in these instances has been due most probably to the condition of the patient himself rather than to the medication. Dr. Kebler has also drawn my attention to the following recognized medical authorities, which, speaking of the use of bromides in treating this disease, and more especially of evil effects that may follow their long continued use. Here follow quotations from well-known medical authors, strongly opposed to the promiscuous and indiscriminate use of the bromides by epileptics. Of these the opinion of Dr. Wm. T. Sprattling, an authority on this disease and Medical Superintendent of the Craig Colony for Epileptics at Sonyea, N. Y., a State Institution of recognized merit, speaking of the evils that may attend the bromide treatment, on p. 364, says: "If pushed too far, death may supervene from acute bromide poisoning. This happened in the case of a boy of 12 years whom I knew, whose parents gave him too frequent doses of a patent nostrum, the essential ingredients of which, as with the bulk of patent epileptic cures, was bromide of potassium."

All of the other citations from medical authorities are of similar import. The testimony also shows that in the opinion of such eminent physicians as Dr. J. H. Musser, Richard C. Cabot, N. S. Davis, E. L. Hunt, Charles G. Stocton, Wm. P. Spattling and Chas. S. Williamson, it is impossible to make a reliable diagnosis of epilepsy in the absence of the patient by the use of what are known as "symptom blanks" sent through the mails." The evidence further shows that, in the opinion of these physicians, the promiscuous and indiscriminate use of the bromide by epileptics, without the guidance of a physician other than advice sent by mail, is attended by danger to the patient. As to the merits of Adonis Vernalis, the other drug used by the concern, six of the physicians knew of no instance in which the cure of epilepsy could be attributed to the use of this drug. Dr. Wm. P. Sprattling's answer is qualified as follows: "No, not that drug alone. The proper treatment of all the epilepsies—there are many kinds—can only be carried out under the following essential heads: medical, general, dietetic and surgical. Epilepsy of any type can no more be properly treated by the use of drugs alone than can tuberculosis be treated by drugs alone. A combination of the essentials is called for in each case—and it is the scientific application of these that alone can produce the best results."

The evidence discloses the fact that "there have been connected with this institute since it commenced business in the spring of 1903, three physicians, namely, Dr. E. H. Schoenling, Dr. H. J. Luecke and Dr. A. L. Guertin." Dr. Schoenling stated at the hearing that for about the first six months, being half owner for the first three months, he attended to the medical end of the business for Mr. Kalmus, examining the symptom blanks and diagnosing the cases, prescribing the treatment and compounding it as well, that after he left Dr. Luecke did this work until December, 1907; and that since then he has again done the diagnosing and prescribing and Dr. Guertin has done the compounding. Dr.

Schoenling graduated in 1900, when about 22 years of age, has made no special study of epilepsy except in connection with this mail order business, is not a member of any medical society, is not regarded in the profession as a specialist, and has most of the time since his graduation worked for $25.00 a week for a Dr. Chas. Shafer, of Cincinnati, who advertises in the public prints, soliciting kidney and urinary and sexual cases. The salary paid him for his work at the institute, he says, has been less than $100 a month; he stated that he spent but a few hours each day at the institute and regarded it as a sort of side line to his regular work with Dr. Shafer."

"Dr. Luecke graduated in 1901, went to this institute in 1903, has had no special preparation in epilepsy, does not consider himself a specialist, and was paid by the institute, the Inspector says, only $15 a month. He is not a member of any medical society, his professional standing is doubtful, his regular practice is sexual and urinary diseases, and in December last his advertisements were excluded from the Cincinnati papers on the ground that they related to the sale of abortifacients and the performing of criminal operations in violation of the statutes of the United States. Dr. Guertin receives $35 a month from the institute for his services, works there but a few hours each day, is not a member of any medical society, his standing in the profession is questionable, he has little or no practice in Cincinnati, and was investigated by this Department in 1905 for giving a concern against which was pending a charge of fraud under these statutes, and against which a fraud order was later issued, a testimonial as to its medicine, which he later admitted to the Department was done for a valuable consideration and without reading the statement which he was paid to sign, and which he repudiated as untrue. He admits he is not a specialist."

"These are the self-styled specialists, and "foremost examining specialists of America" of this institute. No comment is needed on these facts to show the utter fasity and fraudulency of the representations in question."

The brief, which covers 32 pages, also discloses the fact that this institute has treated in all about 6,000 persons, and concludes as follows: "The physicians of the institute were not specialists as pretended, nor did the staff of the institute include the foremost examining specialists of America, but in truth the physicians of the institute were young graduates and men without standing in their profession and following questionable lines of practice, and were men employed at what would seem to be about as small salaries as any at which the required service could be obtained; and the treatment intended to be administered was not entirely harmless, but was of a nature that might wreck the health and even reason and life themselves of the patient. Therefore, while, in what may be said to be a comparatively few instances—as the institute has not disclosed its records in the great number of its cases, patients have experienced from the treatment what is the ordinary effect of the bromides and may feel satisfied with so much, yet I feel it is not true that the other and the greater share of the patrons of the institute have not been deliberately deluded with false hopes and representations, and defrauded of the money which they probably would not have paid if aware of the facts, in addition to having their health, reason and life endangered.

"The answer to the claim that certain of the patrons are satisfied with what benefit they do get from the treatment, is that in that event, were the business conducted with an honest purpose, there should be no occasion for promising any more.

"The satisfaction of the few is not justification for the defrauding of the many. Furthermore, this scarcely is a case in which the patients are sufficiently familiar with the facts to be able to determine whether they should be satisfied or not, and this is especially so of the patient who has commenced the treatment but comparatively recently, and particularly among the class of people among whom it appears the most of the business of the institute is solicited.

"I find that the business conducted by Otto Kalmus under the name of the Epileptic Institute and the Epileptic Institute Company at Cincinnati, Ohio, referred to above, is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and I therefore recommend the issue of a fraud order. The United States Attorney at Cincinnati has caused criminal proceedings to be instituted against Mr. Kalmus for having devised and used the mails in the operation of a scheme to defraud in violation of Section 5,084 R. S. in connection with this Epileptic Institute business." Signed, R. P. Goodwin, Assistant Attorney General.

A fraud order was issued July 23rd, 1908.

The Miracle Workers.

Mr. Samuel Hopkins Adams, in "Collier's Weekly," August 4th, 1906, gives an excellent account of several magnetic quacks, radio-quackery, etc. The following memorandum is copied from the records of the Assistant Attorney General's Office in the case of Professor T. A. Mann Institute of Radiopathy and Central School of Psychology and their Officers and Agents as such at Rochester, N. Y. The Postmaster General, April 29th, 1908, issued an order forbidding the delivery of mail matter and money orders to this concern. * * * "In these advertisements he endeavors by the use of misleading and extravagant assertions to lead the reader to believe that he is a doctor of eminence in the United States, that he has discovered a wonderful force of nature possessing marvelous curative properties, that by means of this power he is able to and will cure diseases which are generally considered hopeless. Among the representations calculated to produce this belief are those to the effect that 'with his phenomenal power this man works wonders, the blind see, the paralyzed walk * * * there is no illness which he cannot cure'; he gives back health in a most incomprehensible manner to sick people who have been declared by physicians to be incurable; that he can and will cure blindness, deafness, consumption, paralysis, cancer, etc.; that he has found the most marvelous power man has so far invented. * * * His advertisements extended to the foreign press and complaints are in the case from the Italian Consular Agent at New York, from a member of the Berlin Press Association, from Mr. Louis Michel, a prominent American residing in Germany, and from several other persons, to the effect that Mann is swindling thousands of poor persons in Italy, Germany, France, Spain, South America, Central America, Mexico and Cuba. One of the pamphlets issued by him state that "We thoroughly explain to you how to renew youth and how to keep it; how to acquire force and how to use it to conquer environment."

OTHER FORMS OF QUACKERY.

Topical Remedies.[*]

Among these may be mentioned the fraudulent and misleading advertisements in connection with many of the Hair Restoratives, Tonics, Hair Dyes and a number of cosmetic preparations especially intended for colored people, like "Glossine," "Anti-Kinkine," "Kinkine," "Straightine," "Ozonized Ox Marrow," for which it is claimed that they will make kinky, knotty and curly hair straight. The hair restorers are credited with the property of producing a luxuriant growth of hair, "make the hair grow out on bald spots," "turn gray hair dark," etc.

Medical literature contains a number of instances in which symptoms of lead poisoning and cases of paralysis were traced to the habitual use of cosmetics, hair dyes and hair restorers. In the "Pharmacal Journal," Vol. LXXIV, p. 223, will be found a list of hair restorers. In twelve articles analyzed the percentage of lead varied from 0.3 to 2.32. Other drugs in such preparations have been known to produce violent inflammation of the scalp.

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[*] See Dr. Kebler's interesting article on nostrums and fraudulent methods of exploitation, "Jour. Am. Med. Assoc." Nov. 10-17, 1906.

In this category also come some of the skin tonics, face lotions and toilet preparations. One of the nine analyzed contained 47 grains of corrosive sublimate and this same poison was contained in varying proportions of 1 to 15 grains per ounce in all; and yet it is claimed that they are "perfectly harmless for the removal of freckles," "to make pretty faces, etc." In discussing the subject of skin bleachers and beautifiers, Dr. Kebler says that one of the agents used for improving the complexion was found on analysis to consist largely of Rochelle salts. Another product sold under the designation of "Complexion Tablets" contained, among other ingredients, strychnin, and he relates an instance where a child 2½ years old accidently consumed a number of these tablets and died from strychnin poisoning. In this connection he also exposes the fraudulent claims of the Mexican Remedy Company for its "Aquamiel," "a magical bust developer and the most marvelous bust producing, blood enriching, tissue forming preparation—a product of the famous Mague Plant of Mexico." Analysis showed that the medicine is absolutely worthless as a tissue developer, etc. In like manner he disposes of the numerous plasters advertised as "positive cures for consumption and other ailments," "the American Herb cure," and "Force of Life remedies," "Nutriola," etc.

PRESCRIPTION NOSTRUMS.

Since the passage of the Food and Drugs Act, which forbids the use of any statement, design or device which is false or misleading on the label or package of any drug product, etc., the manufacturers of nostrums found themselves seriously handicapped. But as in all diabolical pursuits, a way appears to have been found to circumvent the provisions of the law. Dr. Kebler informs us that as long as the law does not forbid the publication of misrepresentations and fraudulent statements in newspapers, this opening is taken advantage of by many promoters of medicinal agents. A rather common method is the publication in the newspapers of advertisements extolling the virtue of certain remedies in certain diseases. Often the receipt is published in connection with the advertisement or furnished upon application free of charge. The prescription, however, always contains at least one product bearing a unique coined name, the nature and composition of which is known only by the advertiser, or the parties interested in furnishing the sale of the remedy. As a result the local druggist is either unable to compound the prescrip-

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*Condensation of the subject matter contained in a special paper prepared for the Commission by Dr. Lyman F. Kebler, Division of Drugs, U. S. Dept. of Agriculture.

tion, or in doing so he is compelled to obtain it from the parties in question, or the patient is compelled to have the prescription filled by the advertiser at an exorbitant price. Dr. Kebler states that this is really an old scheme, which was exposed in the "Druggists' Circular," p. 3, 1859, in connection with the consumption cure of a fictitious Reverend Edward A. Wilson, and a questionable "Extract Blodgetti." The individual behind this scheme during recent years was a Mr. C. A. Abbott, who himself has no medical knowledge whatever, and it appeared in the recent investigation by the Post Office Department that with regard to the Wilson Remedy, no such ingredient as Extract Blodgetti was used. This name was used in the prescription solely for the purpose of making it impossible for the average druggist to fill, thereby compelling the patient to send the advertiser $3.00 for the treatment, although he has no intention of including Extract of Blodgetti in the compound furnished by him on such orders. The Postmaster-General promptly issued a fraud order March 20th, 1908.

Dr. Kebler calls attention to the "Arabian Sea Grass" prescription in connection with "Le Grande Arabian Recipe," exploited by a Dr. J. A. Lawrence of Brooklyn, N. Y., "for the cure of catarrh, bronchitis, hay fever and all diseases of the mucous membrane," and of which the "Druggists' Circular" in 1885 said: "It thus appears that 9 out of the 16 substances either do not exist or are not articles of commerce." The trap is so evident that no druggist need fail to see it, but we have no doubt that many persons are influenced to send the 'Doctor' $3.00 for the medicines." Dr. Kebler writes of a similar scheme under the designation of "Dr. Stevens' East India Consumption Cure," and gives the following sample of the advertisement used in newspapers:

> "CONSUMPTION." "An old physician, retired from business, had placed in his hands by an East India Missionary the formula of a simple vegetable remedy for the speedy and permanent relief of Consumption, Bronchitis, Catarrh, Asthma, and all Throat and Lung Affections; also a positive and radical cure for nervous debility and all nervous complaints. Having tested its wonderful curative powers in thousands of cases, and desiring to relieve human suffering, I will send free of charge to all who wish it this recipe, with full directions for preparing and using. Sent by mail, by addressing, with stamp, naming this paper, W. A. Noyes, 847 Powers Block, Rochester, N. Y."

As in the case of the Wilson remedy, the patient, upon replying to the advertisement, received printed matter setting forth a prescription, testimonials and a story telling how "Dr. Stevens," who, in 1886, was afflicted with consumption, was cured through the agency of the "Sativa remedy," which he received from the hands of an aged missionary who had spent many years in India and other countries of the East, and who had given the recipe to his successor, W. A. Noyes, the present owner of the business, with the admonition to carry on the work of making the remedy known to the afflicted as long as was possible.

The prescription contained ten ingredients, among them two unknown substances. Investigation by the Post Office Department developed the fact that there was not at the time of the investigation nor had there ever been a Dr. Stevens or a missionary connected with the scheme, and a fraud order was promptly issued.

It will be readily understood that such schemes can not be carried on for any length of time without attracting the attention of the Officials of the Post Office Department or of the Bureau of Chemistry. The scheme finally evolved, according to Dr. Kebler, is "that the false and misleading representations, statements and promises should appear in newspapers in the form of 'reading advertisements.'" The advertisement usually contained a prescription, the filling of which required several well-known efficacious agents, together with a "fancy name" product. The prospective patient was advised that the prescription could be filled by any druggist. The druggist, therefore, is made a party to the scheme. In order to render the scheme more effective, it was found desirable to place the advertisement in papers in such a manner as to make them appear either as editorials or general reading matter. As can readily be seen, this required the acquiescence and co-operation of those interested in the management of newspapers. On inquiry it was found that newspaper managers require an increased rate in placing these advertisements, double the regular price being the customary charge. From the large amount of advertising and the number of these remedies, this scheme has apparently been very attractive, not only to the newspapers, but to the promoters of these remedies as well. The earlier mail order remedies were intended for the ignorant classes, but the modernized scheme is for the benefit of the better educated, and that it does appeal to this class is shown by the fact that requests for information concerning the same come from lawyers, congressmen, doctors, etc.

The following is a copy of one of the advertisements:

AN EDITOR'S ADVICE TO RHEUMATICS.

"It is truly said that the 'Lord tempers the wind to the shorn lamb,' and he also seems to send for every ill a remedy. Modern science has done much to develop these remedies, yet sufferers from rheumatism occasionally find it hard to believe that there exists any positive relief for their distress. Nevertheless, we are in a position to recommend to our readers who suffer from rheumatism or kidney or bladder trouble or any derangement of the urinary organs an unfailing relief for their pains. This, we know, will be all the more welcome news because the remedy is easily produced.

"Go ask your druggist for one-half ounce Fluid Extract Cascara Aromatic, one ounce of Concentrated ——— Compound, and four ounces of Aromatic Elixir. The ——— Compound is put up only in one-ounce bottles, so be sure you get the right article. Take these three things home, put them in a bottle, mix them, and take one teaspoonful after each meal and at bed time. For children, from one-third to one-fourth of this dose will be enough. In order to make a permanent cure doubly certain it is best to continue taking the remedy for several days after all pain and swelling have disappeared. You will then be as free from pain as if you had never known what rheumatism was."

Investigation by Dr. Kebler shows that "since the passage of the Federal Law about forty of these prescription nostrums have been launched. * * * The price charged is exorbitant to a degree. * * * This is admitted even by the promoters, but the contention is that it is necessary to charge a high price because of the extensive and expensive advertising necessary to bring the remedies to the attention of the public. The men back of these schemes are usually now, or have been, connected with some advertising agency or have acted in the capacity of advertising agent of some newspaper. They have no knowledge of medicines and claim none is needed, because the large pharmaceutical manufacturers are prepared not only to supply the medicine but the medical data as well. The afflictions usually aimed at for treatment by these remedies are those affecting the lungs, stomach, liver, kidneys and heart."

EFFICIENT WORK OF THE POST OFFICE DEPARTMENT AND OF THE DEPARTMENT OF AGRICULTURE IN ENFORCING THE LAW AROUSES OPPOSITION.

Sufficient evidence has been presented to indicate that the Executive Departments of the Government are determined to administer the law upon the principle that "Righteousness exalteth a nation." It was to be expected that the promoters of fraudulent transactions would leave no stone unturned to accomplish their purpose. In the language of "Collier's Weekly," June 23rd, 1906, "There was an ominous presumption of foreknowledge in what Attorney Lannen, representing the National Food Manufacturers' Association, in its fight for adulterated foods, said at the Pure Food hearing: "I say that it will be but a short time (sic) before the Post Office Department will be made to conform to better rules in promoting justice."

On March 12th, 1906, a Bill was introduced by Mr. Crumpacker in the House of Representatives to provide for a judicial review of orders excluding persons from the use of United States Mail facilities." The effect of this legislation, in the judgment of the Post Office Department, would be to paralyze the good work by the Government in suppressing "fake get rich schemes." "quack medicinal cure alls," and an inconceivable variety of confidence games perpetuated through false and misleading advertisements, such as have in the past cost the public millions of dollars.

According to the report of the Postmaster General "over 2,400 fraud orders have been issued by the Post Office Department under authority of the Act of 1890 and the Supplemental Act of 1895. In less than thirty of these cases has the propriety of the order been challenged in court, and in none of them has it been held erroneous or unwarranted. This record is of exceeding significance and shows clearly that the administration of these statutes by the Post Office Department has been marked by the utmost care and conservatism. The period of time extends over the administration of many different Postmasters General of varying political parties, and the same thoroughness and judicial caution have characterized the administration of the statutes by all of these officers. This record is strong assurance that their future enforcement will be marked by full regard for the rights and privileges of all citizens."

The following are extracts from the statement of the case by the People's Lobby:

"FRAUD ORDERS NOW REVIEWED BY THE COURTS.

"From this excerpt it is clear that the Courts do now review the action of the Postmaster General in issuing orders. In order to relieve the Department of unjust criticism, however, the Postmaster General is not opposed to an express provision of the law for a review in the manner provided by the bill prepared by Representative Foster, a member of the Judiciary Committee, which measure was passed over in favor of the Crumpacker Bill.

"Although the measure is of such vital importance, it was never submitted to the Postmaster General for his opinion, nor was he asked to appear before the Judiciary Committee of the House. The Assistant Attorney General for the Post Office Department appeared of his own volition and argued against the bill. * * *

"INFLUENCE BEHIND THE CRUMPACKER BILL.

"It is positively asserted by the Post Office Department that the influences behind the Crumpacker bill are E. G. Lewis of St. Louis, Mo., 'Professor' Thomas F. Adkin, of Rochester, N. Y., and the 'Honorable' E. F. Hanson, of Chicago, Illinois. Lewis was the promoter of the People's United States Bank, which was organized to transact all its business through the mails. A fraud order was issued against the People's Bank, July 6th, 1905, because of the alleged false and fraudulent representations which the Postmaster General declared Lewis made in the promotion of his scheme. Of these one of the most important was the promise that no loan of funds should be made to the president or to any of the directors of the bank. Up to the time of the issuance of the fraud order, loans had been made to Lewis and to certain of his business enterprises aggregating $907,538.83 upon insufficient security, or no security at all.

"The action of the Postmaster General in issuing a fraud order against the People's Bank was reviewed by the United States Circuit Court of Appeals, and the Postmaster General was fully sustained.

"Adkin was the head of the so-called 'New York Institute of Physicians and Surgeons,' of Rochester, N. Y., which, in advertising a treatment for disease denominated 'Vitaopathy,' made such extravagant claims as in the following advertisement:

"'DEAD MAN TALKED BACK TO LIFE. MIRACULOUS RESCUE FROM GRAVE. MEDICAL SCIENCE COMPLETELY UPSET BY ROCHESTER

WONDER-WORKER, WHO RESTORES LIFE AND HEALS THE SICK WITHOUT THE USE OF DRASTIC DRUGS OR THE SURGEON'S KNIFE; HOPELESS INVALIDS RESTORED TO HEALTH.

"'I feel that it is my duty as a Christian to use this wonderful power that has been given to me for the benefit of all mankind to cast out from their body the evils of disease. I have cured them that quickly that I have been credited with working miracles.'

"Adkin and the 'New York Institute of Physicians and Surgeons' were denied the use of the mails, and the action of the Post Office Department was sustained by the Supreme Court of the District of Columbia.

"Hanson organized the 'Nutriola Company' at Belfast, Maine, and subsequently moved his patent medicine business to Chicago, Illinois. A fraud order was issued against this concern. Furthermore, Hanson was indicted and convicted on the charge of misusing the mails because some of his literature was improper and obscene. * * *

"Overstreet's Position Misrepresented.

"The Congressional Record bears out the charge that the Crumpacker bill was railroaded through the House. Three days before the holiday recess the sponsor of this measure secured the passage of a resolution placing it on the calendar as a privileged bill. It is of particular importance to note that Mr. Crumpacker put through his resolution largely on this statement.

"'I submitted the bill to Mr. Overstreet, the Chairman of the Committee on the Post Office and Post Roads * * * and he said the bill ought to be passed. He has had experience enough to believe the bill ought to pass, and all I am asking now is to give the bill a status on the calendar so as it can be taken up on its merits.'

"Mr. Overstreet was absent when this statement was made. As a matter of fact, the Chairman of the Committee on the Post Office and Post Roads made the strongest speech in opposition to the bill when it came up for final action January 7, 1907, and objected privately to Mr. Crumpacker, that morning, on the inadequate time to be allowed for the consideration and discussion of so vital a measure. Representative Mann of Illinois also opposed the bill in a vigorous manner.

"The Crumpacker bill is now in the Judiciary Committee of the Senate, where it is hoped more consideration will be given to the protection of the public and less weight attached to the interests of borrower Lewis, the 'Honorable' E. F. Hanson, and 'Professor' Adkin.

"It is gratifying to note that the bill was held up by the Senate Judiciary Committee for a careful consideration."

Conclusions and Recommendations.

A review of the evidence in the foregoing pages reveals the fact that existing laws are insufficient to cope with the evil. The enactment of Mr. Mann's Bill H. R. and other amendments to the Poison Law, while steps in the right direction, will not prevent improper traffic in the habit-forming drugs, so long as we have to deal with unscrupulous persons even in the ranks of the medical, dental or veterinary profession—and for whom adequate punishment should be provided whenever, in the judgment of the Court, they have abused their professional rights and privileges. As far as the suppression of quackery is concerned, nothing short of a total exclusion from the mails of letters, newspapers, circulars, pamphlets or publication of any kind containing any advertisement of secret remedies for the cure and treatment of disease, will reach the evil. As a matter of fact, no physician should be permitted to prescribe by mail.

In view of the importance of the subject, it is recommended that a special commission, composed of representatives of the Post Office Department, Professor H. W. Wiley of the Bureau of Chemistry, and Medical Officers of the Public Health and Marine Hospital Service, be appointed for the purpose of investigation and the formulation of such legislation as may be deemed necessary in the interest of public health and morals.

In the meantime, it is earnestly recommended that the Postmaster General be requested to publish with the Monthly Supplements to the Official Postal Guide a Bulletin setting forth the essential facts in connection with the fraud orders issued during the preceding months. Such bulletins to be posted in Post Offices and to be distributed in sufficient numbers along the Rural Delivery routes. It is also recommended that all information concerning the harmful ingredients in foods, medicines, soft and alcoholic drinks which may come to light during the execution of the Pure Food and Drugs Law, be published by the Department of Agriculture in the same manner as Farmers' Bulletins are now being published. The public is entitled to be warned, and for this purpose it is essential that the indisputable facts should emanate from some official source.

The "Journal of the American Medical Association" has done good work in educating the Medical Profession, and many of our leading Magazines have disseminated knowledge of this kind among their readers, but after all the masses must be reached in the manner indicated, as the majority of newspapers will not publish the facts.

SOCIOLOGICAL STUDY OF 1,251 FAMILIES.

By G. H. WEBER, *Statistician of the Commission.*

SCOPE.

The investigation, which was conducted during the months of February to June, inclusive, covered a total of 1,251 families, occupying 1,054 houses and comprising 5,157 persons. The plan of the Commission was to investigate only those families whose incomes were below $1,000 per annum. In some cases, where family incomes were greater, but where the families lived under the same general conditions and on the same streets and alleys, they were also included. In selecting the streets, courts and alleys, the aim has been to take a number of alleys where the living conditions were worst, a fairly equal number where they were medium and a corresponding number where the conditions were the best. This was done in order to give, as nearly as possible, a true picture of the housing, social and economic conditions of these people as a whole.

It has also been the aim of the Commission to have the investigation cover a proportion of white and of colored families equal to that of the total white and colored families of that class in Washington.

The following table shows, by streets and sections, the number of houses, families and persons included in the investigation:

	Number of houses.	Number of families.	Number of persons.		
			Adults.	Children under 16 years.	Total.
WHITE.					
NORTHWEST.					
27th Street	23	23	64	53	117
Cissel Alley	10	10	29	22	51
Temperance Avenue	c	1	2	0	2
Linger's Court	c1	2	4	0	4
Potomac Street	E5	10	25	27	52
Jackson Hall Alley	c12	11	53	2	55
Valley Street	21	23	66	35	101
Bank Street	1	1	3	0	3
Snow Alley	2	2	5	3	8
Jefferson Street	c38	47	134	56	190
30th Street	2	2	9	4	13
Purdy's Court	12	11	42	25	67
Total	G127	143	436	227	663
NORTHEAST.					
Gales Street	35	35	104	83	187
20th Street	10	10	27	31	58
Brewer's Court	17	17	33	26	59
Pleasant Alley	6	6	12	4	16
Kramer Street	41	44	116	76	192
Total	109	112	292	220	512
SOUTHEAST.					
L Street	39	39	96	71	167
K Street	27	29	69	49	118
14th Street	8	8	23	15	38
12th Street	17	17	41	38	79
5th Street	6	7	18	9	27
13th Street	8	8	23	10	33
Georgia Avenue	23	24	68	39	107
Mechanics Place	16	16	34	21	55
Total	144	148	372	252	624
SOUTHWEST.					
Riley's Court	3	3	8	1	9
12th Street	6	7	23	22	45
Maryland Avenue	16	19	50	27	77
Huntoon Place	15	17	37	38	75
Armory Place	3	8	57	..	57
Union Street	42	42	103	65	168
McLean Street	59	60	169	79	248
Willow Tree Alley	1	1	2	..	2
Nolan's Court	c	1	2	..	2
F Street	31	33	109	69	178
Total	c186	191	558	301	859
Total, all sections	i566	594	1660	1000	2658
COLORED.					
NORTHWEST.					
27th Street	13	18	51	26	77
Cissel Alley	5	5	11	3	14
Temperance Avenue	B33	43	102	52	154

(See page 222 for references.)

	Number of houses.	Number of families.	Number of persons.		
			Adults.	Children under 16 years.	Total.
Linger's Court	B27	40	98	36	134
Brainard Street	7	7	23	6	29
Potomac Street	D5	14	34	14	48
Jackson Hall Alley	B16	23	62	15	77
King's Court	9	12	29	9	38
Philip's Court	16	16	49	27	76
Cleveland Street	44	57	149	52	201
Shepherd Alley	13	15	34	13	47
Valley Street	29	31	88	42	130
O Street Alley	36	63	186	87	273
Bank Street	6	7	23	17	40
Snow Alley	42	53	147	55	202
Goat Alley	39	47	113	57	170
Jefferson Street	B10	16	45	22	67
Johnson Avenue	3	4	17	2	19
Total	F353	471	1261	535	1796
NORTHEAST.					
Gales Street	6	6	16	6	22
Levis Street	12	15	46	34	80
Brewer's Court	11	11	22	17	39
Total	29	32	84	57	141
SOUTHWEST.					
Armory Place	3	A8	A25	4	29
Van Street	38	41	100	47	147
Willow Tree Alley	31	49	118	43	161
Nolan's Court	B34	46	109	73	182
F Street	6	10	34	9	43
Total	B112	154	386	176	562
Total, all sections	H494	A657	A1731	768	2499
Total, white and colored	H1060	A1251	A3389	1768	5157

A Includes 2 mixed families, 7 white and 5 colored adults living together, all counted as colored.
B Including 1 house occupied by both colored and white persons.
C Not including 1 house occupied by both colored and white persons.
D Including 2 houses occupied by both colored and white persons.
E Not including 2 houses occupied by both colored and white persons.
F Including 6 houses occupied by both colored and white persons.
G Not including 6 houses occupied by both colored and white persons.
H Including 7 houses occupied by both colored and white persons.
i Not including 7 houses occupied by both colored and white persons.

Of the 1,251 families investigated 594, or 47½%, were white and 52½% were colored, and of the total persons constituting these families 2,658, or 51½%, were white, and 2,499, or 48½%, were colored.

LIVING CONDITIONS.

The poorer people of Washington, unlike those of most other cities, live mainly in small one-family houses. This is shown by the fact that 2,151 families visited occupied 1,054 separate houses. These houses are nearly all old, two-story brick or frame buildings without such modern conveniences as hot and cold water, bathrooms or inside water-closets.

Cases of overcrowding were common, especially among the colored people, in some instances as many as eight or ten people occupying one bed-room at night. Cases were also common where families crowded in one or two rooms at night when sitting or dining rooms could have been utilized for sleeping purposes. In general, however, where apartments were small and families large, all available space, even the kitchens, were used as bed-rooms. While the number of families keeping boarders or lodgers was comparatively small, not a few cases were found where members of families of both sexes, old and young, slept in the same rooms with lodgers. The moral and sanitary effects of such conditions are obvious.

INCOME AND EXPENDITURES.

In the case of 1,217 families, for which fairly accurate returns were made concerning income and expenditures, 476, or 39 per cent, had a family income of $500 or less per annum; 159, or 13 per cent, had an income of from $500 to $600; 153, or 12½ per cent, from $600 to $700; 153, or 12½ per cent, from $700 to $800; 89, or 7 per cent, from $800 to $900; 93, or 8 per cent, from $900 to $1,000; 82, or 7 per cent, from $1,000 to $1,500, and 12, or 1 per cent, had an annual income of over $1,500.

The average income and expenditures for each of these groups are shown in absolute and relative figures in the following tables:

AVERAGE ANNUAL EXPENDITURES OF ONE FAMILY.

	Number families in Class.	Average size families.	Average income per family.	Rent.	Food.	Fuel and light.	Clothing.	Insurance.	Sickness and death.	Patent medicines.	Liquor.	Tobacco.	Amusement.	Miscellaneous or other.	Total.	Surplus.
Class A, Income $500 or under..........	476	3.11	$351.35	$72.69	$146.85	$26.25	$32.54	$12.25	$5.43	$ .97	$8.82	$4.72	$5.02	$34.34	$349.88	
Class B, $500 to $600..................	159	3.94	546.31	97.44	220.55	33.88	53.62	20.24	5.05	1.18	16.44	7.64	11.27	69.36	536.67	$9.64
Class C, $600 to $700..................	153	4.18	638.57	106.16	265.55	32.18	69.67	19.05	6.77	1.69	21.08	11.10	14.52	74.23	622.00	16.57
Class D, $700 to $800..................	153	4.40	749.91	119.04	296.54	38.01	82.75	16.08	9.90	1.35	18.67	13.12	28.91	82.35	706.72	43.19
Class E, $800 to $900..................	89	4.79	846.93	115.12	341.65	37.03	97.68	23.79	10.51	1.40	12.77	13.52	30.95	102.64	787.06	59.87
Class F, $900 to $1,000................	93	4.77	921.41	127.36	340.73	38.91	104.13	24.22	8.80	.97	15.31	16.25	41.41	109.90	827.99	93.42
Glass G, $1,00 to $1,500...............	82	5.48	1,182.93	135.52	378.74	41.81	148.48	31.08	15.46	3.71	14.78	12.53	38.40	210.02	1,030.53	152.40
Class H, $1,500 and upwards...........	12	4.50	1,899.58	100.58	401.00	49.83	193.16	32.83	47.83	2.08	21.25	19.50	73.00	241.16	1,182.22	717.36

SHOWING SAME AVERAGES BY PERCENTAGE.

			Gross income per cent.	Rent.	Food.	Fuel and light.	Clothing.	Insurance.	Sickness and death.	Patent medicines.	Liquor.	Tobacco.	Amusements.	Miscellaneous or other.	Total.	Surplus.
Class A, $500 or under..................			100%	21.37	43.68	6.74	8.99	2.80	2.12	.29	1.97	1.21	1.47	7.76	98.39	3.18
Class B, $500 to $600...................			100%	17.56	43.59	5.41	9.90	3.04	.81	.16	2.33	1.45	2.76	10.78	97.73	2.42
Class C, $600 to $700...................			100%	17.17	41.40	4.88	10.53	2.67	1.00	.18	3.27	1.82	2.68	11.20	96.82	3.18
Class D, $700 to $800...................			100%	15.64	40.21	4.89	11.14	2.27	1.40	.18	2.32	1.71	3.52	10.78	94.10	5.90
Class E, $800 to $900....................			100%	13.31	41.92	4.33	11.59	2.77	1.30	.13	1.39	1.52	3.43	12.04	93.76	6.28
Class F, $900 to $1,000.................			100%	13.60	38.43	4.05	11.70	2.90	1.10	.11	1.89	1.76	3.95	11.89	91.42	8.58
Class G, $1,000 to $1,500...............			100%	10.96	33.38	3.34	11.55	2.39	1.34	.23	1.41	1.19	3.97	14.01	86.29	13.71
Class H, $1,500 and upwards............			100%	5.37	21.03	2.77	10.23	1.90	3.22	.14	.90	1.02	4.00	14.08	64.58	35.42

AVERAGE WEEKLY EXPENSES FOR

	Meats.	Fats.	Sugar.	Bread.	Vegetables.	Fruit.	Coffee.	Tea or Cocoa.		Meats.	Fats.	Sugar.	Bread.	Vegetables.	Fruit.	Coffee.	Tea or Cocoa.
Class A, Income $500 or under	1.13	.24	.13	.48	.53	.16	.13	.07	Class E, $800 to $900.........	2.38	.51	.23	.82	1.50	.23	.28	.18
Class B, $500 to $600.........	1.67	.38	.19	.62	.80	.13	.17	.13	Class F, $900 to $1,000.......	2.27	.51	.22	.74	1.65	.33	.33	.20
Class C, $600 to $700.........	1.84	.38	.18	.65	1.06	.18	.23	.15	Class G, $1,000 to $1,500......	2.76	.85	.28	1.00	1.34	.35	.35	.17
Class D, $700 to $800.........	2.16	.42	.21	.64	1.42	.22	.27	.15	Class H, $1,500 and upwards	3.31	.95	.30	1.75	1.02	.38	.32	.11

These figures show actual money received and expended. In the expenditures no items appear unless they represent money actually paid out. Where items of rent, food, clothing, etc., were unpaid at the close of the year they do not figure in the expenditures.

The average family, with an income of $500 or less per annum, expended about $6.00 per month for rent, this item constituting about 21 per cent of the total family income. The average monthly rents for the other six groups were about $8, $9, $10, $9.50, $10.50 and $11, respectively. It will be observed, by consulting the second table, that the proportion of income paid for rent diminishes steadily with the increase in the family income. Thus, an average family with an income of $500 or less expended 21 per cent for rent, an average family with an income of $500 to $600 expends 17½ per cent; $600 to 700, 17⅙ per cent; $700 to $800, 15⅔ per cent; $800 to $900, 13⅓ per cent; $900 to $1,000, 13⅔ per cent, an average family with an income of $1,000 to $1,500, and living in the territory investigated, expends only about 11 per cent of its income for rent.

In the matter of food, the average family earning $500 or less expended about $147 per year, or about 44 per cent of the total income. This proportion also decreases almost steadily with the increase in income, the average family in the highest class paying proportionately only about 21 per cent of its income for food.

The same is true with regard to fuel and light, for which the average family of the lowest income group pays $26, or 6¾ per cent, for fuel and light, while the average family of the highest income group pays about $42, or 2¾ per cent.

While for these necessities of life, i. e., shelter, food, heat and light, the proportion of expenditure increases with the decrease of income, it is not so with other items. In the matter of clothing, the proportion increases steadily from 9 to about 11¾ per cent in the first six income groups, namely, those of 1,000 and under, and then decreases to 10¼ per cent in the highest income group. The proportion of the income paid for insurance varies irregularly in the different income groups, being distinctly higher, however, in the case of families with incomes of less than $1,000 than in the case of families whose incomes are higher. The items of amusements, like that of clothing, increases proportionately with the increase in family income. The other items of expenditure show no marked tendency to increase or decrease in family income.

The expenditures for liquor and tobacco, as shown in the table, are probably less than those actually incurred, as all the investigators report a tendency on the part of the families visited to minify this item of expense. As it is, however, it shows that by eliminating this useless expense an average family earning $500 or less per annum could save over $12 per year, which, if added to the rent, would materially improve the home conditions of the family. In the case of the other families with incomes of $1,000 or less per annum, the average annual expenditures for liquor and tobacco range, in the different income groups, from about $24 to $32. Taken as a whole, the families investigated could add on an average of at least one room each to their overcrowded homes if the money expended for intoxicants and tobacco were devoted to the payment of rent.

Sickness and death (including expenditures for patent medicines) caused an annual expenditure ranging, in the different income groups, from about $6.50 to $50 per annum.

The surplus remaining after deducting the annual family expenditures from the annual family incomes, as shown by the income groups, increased steadily with the family income, ranging in amount from $6.40 in the lowest group ($500 per annum and under) to $718.92 in the highest group. It must be remembered that this last group consists largely of families who live in the environments where they were found on account of business interests, such as families of grocers, saloon keepers, etc., or of foreign males who maintain co-operative households and send a large part of their earnings to their dependents abroad.

The 1,123 families whose incomes were less than $1,000 per annum had an average income per family of $559 per year. Of this average income, $435, or 78 per cent, were expended for actual necessities, namely, for rent, food, fuel, clothing, insurance, sickness, medicines and death. This leaves but $124, or 22 per cent, for all other expenditures and for savings. Of this balance $23, or 4 per cent of the entire income, were expended for intoxicating liquors and tobacco; $15, or 3 per cent, for amusements; $63, or 11 per cent, for miscellaneous; leaving $23, or 4 per cent of the average income, to be laid aside as savings.

Occupations.

Of the total occupants of the houses visited, the occupations of 2,413 wage-earners were ascertained. Of these, 821 were white males, 708 were colored males, 153 were white females, and 731 were colored females. It will be noticed that of the white people visited and whose occupations were reported, only about 17½ per cent were females, while of the colored people over one-half of the wage-earners were females.

Of the white males, about 42½ per cent were skilled workers, such as carpenters, painters, machinists, etc., 27½ per cent were unskilled laborers, 9¼ per cent were clerks, salesmen, etc., 8 per cent were peddlers and hucksters; 5½ per cent were drivers and teamsters. The remaining 7¼ per cent were shopkeepers, persons engaged in personal or domestic service, and various other occupations.

Of the colored male wage-earners, 56½ per cent were unskilled laborers; 19½ per cent were drivers and teamsters; 7½ per cent were engaged in personal or domestic service; 5¾ per cent were skilled workers; 2 per cent were clerks, salesmen, etc., and the remaining 8¾ per cent were in other occupations.

Of white female wage-earners, 38½ per cent were clerks, saleswomen, etc.; 15¾ per cent were dressmakers and seamstresses; 7¾ per cent were laundresses; 7¼ per cent were engaged as cooks and domestic servants; 6½ per cent were charwomen; 5¼ per cent were shopkeepers, and 4 per cent were waitresses and dish-washers; the remaining 15 per cent being employed as nurses, hucksters and in other occupations.

Of the colored female wage-earners, 57¼ per cent were laundresses; 34¼ per cent were cooks and domestic servants; 3 per cent were dressmakers and seamstresses; 2¾ per cent were charwomen, and the remaining 2¾ per cent were waitresses, dish-washers, nurses, school teachers, shopkeepers, etc.

These occupation statistics show that the colored population was engaged mainly in the unskilled manual occupations and in personal or domestic service, while the white population were mostly engaged in somewhat higher class work.

The two following tables show the number of persons engaged in each of the leading occupations, in each section of the city and in the entire district covered by the investigation:

OCCUPATION OF MALES.

ENTIRE CITY.	Bricklayers.	Carpenters.	Engineers.	Machinists.	Motormen.	Painters.	Paper Hangers.	Tinners.	Other skilled laborers.	Unskilled laborers.	Drivers and Teamsters.	Clerks, Salesmen, etc.	Personal service.	Peddlers and hucksters.	Shop keepers.	Other independent workers.	Miscellaneous.	Total.
WHITES.																		
N. W.	5	3	6	1	1	7	..	7	50	41	17	21	4	48	11	4	13	239
N. E.	2	18	1	2	..	10	16	4	37	35	7	10	..	4	4	..	5	155
S. W.	2	14	4	5	10	2	..	1	39	109	16	28	1	5	1	1	21	259
S. E.	3	11	3	17	2	15	2	..	42	41	6	17	..	8	1	..	..	168
Total ..	12	46	14	25	13	34	18	12	168	226	46	76	5	65	17	5	39	821
COLORED.																		
N. W.	..	2	2	..	..	2	..	..	23	276	107	10	42	8	3	1	46	522
N. E.	..	..	..	..	..	..	..	..	3	14	8	2	3	..	..	..	2	32
S. W.	..	..	..	..	..	..	..	..	8	110	23	3	8	..	2	..	..	154
S. E.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	0	2	2	0	0	2	0	0	34	400	138	15	53	8	5	1	48	708
WHITES AND COLORED Total ..	12	48	16	25	13	36	18	12	202	626	184	91	58	73	22	6	87	1529

OCCUPATION OF FEMALES.

ENTIRE CITY.	Charwomen.	Clerks, Saleswomen, etc.	Cooks.	Dressmakers and Seamstresses.	Hucksters.	Laundresses.	Nurses.	School teachers.	Servants, domestic.	Shop keepers.	Waitresses and dish washers.	Miscellaneous.	Total.
WHITE.													
N. W.	4	15	..	10	..	3	2	..	2	2	2	4	44
N. E.	..	9	1	..	2	5	..	..	3	3	2	1	26
S. W.	3	18	1	8	..	3	1	..	4	3	2	10	53
S. E.	3	17	0	6	1	1	..	..	...	..	..	2	30
Total	10	59	2	24	3	12	3	0	9	8	6	17	153
COLORED.													
N. W.	10	..	61	13	..	324	4	..	143	..	5	5	565
N. E.	1	..	..	5	..	13	1	2	4	..	..	..	26
S. W.	9	..	19	3	..	81	1	..	23	2	1	1	140
S. E.	..	..	..	..	..	...	..	..	...	..	..	..	...
Total	20	0	80	21	0	418	6	2	170	2	6	6	731
Total, white and colored..	30	59	82	45	3	430	9	2	179	10	12	23	884

Of the total number of white wage-earners enumerated, 101, or 10¼ per cent, were reported as being members of labor organizations; and of the colored wage-earners only 1½ per cent belonged to labor unions.

HOURS OF LABOR.

The hours of labor of these wage-earners varied from 2 to 18 per day, the number working more than 10 and less than 8 being comparatively small. Of the total number reporting hours of labor, 25¾ per cent worked 8 hours per day; 11½ per cent worked 9 hours, and 22 per cent worked 10 hours per day. These, together with a small number working 8½ and 9½ hours per day, make the total number working from 8 to 10 hours per day equal to about 61 per cent of the persons whose hours of labor were reported. Of the rest about 3½ per cent of the entire number worked less than 8 hours; 22 per cent worked over 10 hours, and 13½ per cent worked at irregular hours. Those working over 10 hours per day were mainly colored laundresses and female domestic servants.

The following table shows the number of white and colored wage-earners classified according to the number of working hours per day:

ENTIRE CITY.	Hours of labor per day.																													Irregular.	Total.
	1	1½	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	13	14	15	16	17	18		
WHITE.																															
N. W. ..	0	0	2	0	0	0	0	1	1	1	0	1	2	1	71	1	5	0	49	0	15	0	13	1	2	0	1	0	0	57	224
N. E. ..	0	0	0	0	0	0	0	0	2	1	0	0	0	0	62	9	36	2	33	0	1	0	7	2	3	0	1	0	1	26	186
S. W. ..	0	0	0	0	0	1	1	0	0	0	0	0	3	4	86	4	30	6	115	11	6	0	9	0	2	0	0	0	0	71	349
S. E. ...	0	0	0	0	0	0	0	0	1	0	0	0	0	0	84	1	84	0	29	0	1	0	0	0	1	0	0	0	0	0	201
Total ..	0	0	2	0	0	1	1	1	4	2	0	1	5	5	303	15	155	8	226	11	23	0	29	3	8	0	2	0	1	154	960
COLORED.																															
N. W. ..	0	0	3	0	4	1	6	0	5	0	11	0	8	0	131	4	60	2	165	1	41	0	172	13	37	3	1	0	2	89	759
N. E. ..	0	0	0	0	0	0	0	0	0	0	2	0	0	0	8	0	2	0	5	0	1	0	6	3	0	3	0	0	1	15	46
S. W. ..	0	0	0	0	0	0	1	0	2	0	3	0	2	0	91	1	21	1	57	1	12	0	73	3	3	1	1	0	0	23	296
S. E. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	....
Total ...	0	0	3	0	4	1	7	0	7	0	16	0	10	0	230	5	83	3	227	2	54	0	251	19	40	7	2	0	3	127	1101
Whites and colored Total ..	0	0	5	0	4	2	8	1	11	2	16	1	15	5	533	20	238	11	453	13	77	0	280	22	48	7	4	0	4	281	2061

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EMPLOYMENT.

In the case of 2,439 wage-earners, returns were made concerning the continuance of employment during the year covered by the investigation. Of these, 993 were white and 1,446 were colored wage-earners.

Of the white wage-earners, 581, or 58½ per cent, were employed the entire year; 42, or 4¼ per cent, were idle an average of 11 weeks on account of illness, and 370, or 37¼ per cent, were idle an average of 16½ weeks for other reasons. Of the whole number of white wage-earners (including those working full time), the average time lost during the year was about 6½ weeks out of the 52.

The colored wage-earners show a larger proportion of unemployment, if the latter is measurerd by the number of persons idle, but the average time lost of all colored wage-earners is almost the same as that of the white. Thus, of 1,446 colored wage-earners, 634, or 43¾ per cent, worked the full 52 weeks; 161, or 11¼ per cent, were idle an average of 5.4 weeks on account of sickness, and 651, or 45 per cent, were idle an average of 13.4 weeks for other reasons. The average period of idleness of all colored wage-earners was a little less than 6¾ weeks. It appears, therefore, that while the white wage-earners are more steady in their employment, their periods of unemployment, both on account of illness and for other reasons, are longer than those of the colored wage-earners.

The figures of unemployment are shown by color and geographical section, in the following table:

WEEKS EMPLOYED.

ENTIRE CITY.	Total wage-earners reporting.	Wage-earners employed 52 weeks.	Wage-earners idle on account of illness.			Wage-earners idle for other reasons.			Average weeks idle per wage-earner.
			Number.	Total weeks idle.	Weeks idle per person.	Number.	Total weeks idle.	Weeks idle per person.	
WHITE.									
N. W.	268	158	12	111	9.3	98	1627	16.6	
N. E.	177	80	13	190	14.7	84	1569	18.7	
S. W.	342	204	15	148	9.8	123	1834	15.0	
S. E.	206	139	2	16	8.0	65	1039	16.0	
Total	993	581	42	465	11.1	370	6069	16.4	6.5
COLORED.									
N. W.	1088	511	122	673	5.5	455	6869	15.1	
N. E.	57	43	1	5	5.0	13	150	11.5	
S. W.	301	80	38	199	5.2	183	1694	9.3	
S. E.	...	...	...	...	...	...	...	...	
Total	1446	635	161	877	5.4	651	8713	13.4	
Total White and Colored	2439	1215	203	1342	6.6	1021	14,782	14.5	6.6

The reasons given for unemployment are very meager, the persons visited being generally averse to answering this inquiry. In the case of white wage-earners, the reasons given were inability to secure work in 43 cases; illness in 42 cases; old age in 4 cases; drunkenness in 3 cases; bad weather in 3 cases and laziness in 1 case. Among the colored people the causes assigned were illness in 161 cases; inability to secure work in 62 cases; laziness in 11 cases; bad weather in 11 cases; old age in 8 cases; drunkenness in 5 cases; incapacity in 2 cases and lack of skill in 1 case.

Wage-Earners' Lunches.

Inquiries concerning the meals of wage-earners brought out the information that in 678 cases they were compelled to eat cold victuals, 750 carried dinner pails, and 205 were reported as being accustomed to consume alcoholic beverages with their meals. The number in each case was greater among the white than among the colored wage-earners.

Sickness.

The returns concerning illness show that of a total population of 5,157 persons enumerated, there had been 613, or 12 per cent, sick during the past year. It is very likely, however, that in this enumeration many cases of slight illness had been forgotten by the families when visited, as the actual sickness rate must have been much higher. This rate was considerably higher among the colored than among the white population. The average duration of sickness per case was reported to be 29½ days for a total of 607 cases. The average duration of illness was reported to be much longer in the case of colored than of white persons, namely, 22.4 days and 35.6 days, respectively.

The deaths reported during the past year were likewise surprisingly few, although the investigators made a special effort to obtain complete returns. Thus, there were reported but 23 deaths among the white, and 34 deaths among the colored population, making a death rate of 9 and 13 per 1,000 respectively, figures which are obviously too low. The most frequent causes of death reported were tuberculosis, 11 cases; pneumonia, 7 cases; heart disease and indigestion, each 4 cases.

The cases of permanent disability as shown by the returns are comparatively few, namely, 42. The age was reported in 39 cases, of which 3 were persons 19 years of age or under; 14 persons 20 to 49 years; 19 persons 50 to 79 years, and 3 persons 80 years of age or over. The most frequent causes of permanent disability were rheumatism, 8 cases; senility, 7 cases and tuberculosis, 5 cases.

INSURANCE.

A surprisingly large number of persons were found to carry life or sick insurance. In tabulating insurance returns, only members of families, exclusive of boarders and lodgers, were considered because such returns concerning the latter would necessarily be incomplete. It was found that of a population of 4,889, 2,202, or 45 per cent, carried life insurance of some sort, and 855, or 17½ per cent, carried insurance against sickness. The insurance was almost entirely carried in either industrial insurance companies or in fraternal or other mutual benefit associations, and the premium payments were usually made in weekly installments. About the same proportion of white and colored persons carry this insurance, although there were proportionately more white carrying life insurance, and proportionately more colored people carrying sick insurance. The next table gives the details by color and geographical sections:

ENTIRE CITY.	Total families.	Members of families, exclusive of boarders and lodgers.	Members of families carrying	
			Life insurance.	Sick insurance.
WHITE.				
Northwest	143	611	363	27
Northeast	112	501	331	25
Southeast	148	620	150	7
Southwest	191	861	351	31
White, total	594	2593	1195	90
COLORED.				
Northwest	471	1664	720	591
Northeast	32	127	41	34
Southeast	...	...	...	...
Southwest	155	505	246	140
Colored total	657	2296	1007	765
Total, white and colored	1251	4889	2202	855

INSTALLMENT PAYMENTS.

The investigators found it exceedingly difficult to obtain information concerning installment payments on furniture, clothing and money borrowed, and in many cases the families refused to answer this inquiry. The returns, therefore, are necessarily somewhat meager.

Transactions of this kind were found to be much more frequent among the colored than among the white population. Of 136 families who answered affirmatively the inquiry concerning furniture purchases on the installment plan, 35 were white and 66 were colored. The total cost of the furniture so purchased was greater, however, in the case of the white than of the colored people, namely, $3,235 and $2,871 respectively. Under furniture were also included one watch, one graphophone and four pianos. Clothing was reported purchased on the installment plan in 5 cases of white and 8 cases of colored families, the total cost of the clothing being $121 and $162 respectively. The furniture and clothing installment payments were usually made weekly.

Loan Companies.

The practice of borrowing money for repayment on the installment plan appears to have been confined mostly to the colored people, only 3 white families having reported such transactions as against 26 colored families. The total amount borrowed in this way was $130 by the white, and $420 by the colored families. It was not possible in all these cases to ascertain the terms of repayment upon which these loans were made, but a sufficient number of cases is given below to show the exorbitant rates paid for the same:

Amount borrowed.	Monthly payments.	Number of months.	Amount repaid.	Charges.
$15	$3.50	6	$21.00	$6.00
14	3.40	6	20.40	6.40
20	3.00	8	24.00	4.00
15	*a*0.70	*a*46	32.20	17.20
10	2.60	6	15.60	5.60
10	2.95	6	17.50	7.50
10	2.20	8	17.60	7.60
15	2.65	10	26.50	11.50
20	3.50	10	35.00	15.00
25	3.80	10	38.00	13.00
10	2.25	8	18.00	8.00
15	3.00	6	18.00	3.00
15	3.70	6	22.20	7.20
25	4.50	9	40.50	15.50
15	2.75	9	24.75	9.75
10	3.00	6	18.00	8.00
10	*a*0.70	a28	19.60	9.60
15	2.70	9	24.30	9.30
25	6.10	6	36.60	11.60
5	2.60	2½	6.50	1.50

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a weekly.

Illiteracy.

In tabulating the statistics of illiteracy only those persons were considered who had passed the school age, namely, 14 years and over. Of 4,161 such persons, 502, or 12.1 per cent, were unable to read or write. The percentage of illiteracy was more than three time as great among the colored than among the white population, namely, 17.5 and 5.4 per cent, respectively. In the case of both white and colored the percentage of illiteracy was greater among the males than among the females. The following table shows the data concerning illiteracy by sex and color for each section:

ENTIRE CITY.	Total persons 14 years of age and over.			Illiterates 14 years of age and over.					
				Number.			Per cent of total.		
	Male.	Female.	Both sexes.	Male.	Female.	Both sexes.	Male.	Female.	Both sexes
WHITE.									
Northwest	310	264	574	30	20	50			
Northeast	154	155	309	3	5	8			
Southeast	189	195	384	1	..	1			
Southwest	323	280	603	38	4	42			
White, total...	976	894	1870	72	29	101	7.37	3.24	5.40
COLORED.									
Northwest	523	689	1212	102	169	271			
Northeast	42	48	90	3	8	10			
Southeast	...	...	...	...	...	...			
Southwest	176	490	989	62	58	120			
Colored, total...	741	1227	2291	167	235	401	22.5	19.1	17.5
Total White and Colored....	1717	2121	4161	239	264	502	13.9	12.4	12.1

SCHOOL ATTENDANCE.

Figures showing school attendance are given in the next table:

ENTIRE CITY.	Children 7 to 14 years of age.									Children under 7 attending school.	Children over 14 attending school.
	Total.	Attending school.						Not attending school.			
		Less than 5 weeks.	5 and less than 10 weeks.	10 and less than 20 weeks.	20 and less than 30 weeks.	30 weeks and over.	Total.	Number.	Per cent.		
WHITE.											
Northwest	110	0	2	4	3	92	101	8		6	10
Northeast	102	0	0	3	9	79	91	11		12	13
Southwest	162	1	0	39	3	110	153	10		7	13
Southeast	123	0	0	0	54	64	118	5		5	10
Total White..	497	1	2	46	69	345	463	34		30	46
COLORED.											
Northwest	249	1	0	30	7	167	205	44		10	26
Northeast	32	0	0	0	1	28	29	3		3	5
Southwest	110	2	0	14	2	82	100	10		5	12
Southeast	...	...	...	...	...	...	...	...	...	...	...
Total Colored	391	3	0	44	10	277	334	57		18	43
Total White and Colored..	888	4	2	90	79	622	797	91		48	89

It will be observed that a considerable number of children of compulsory school age were found who had either not attended school at all during the past year or who attended less than one-half of the school term. Thus, 91 children, from 7 to 14 years of age, had been kept out of school the entire year; and 96 were in school less than 20 weeks during the year. Those not attending at all were mostly colored children. On the other hand, 48 children under 7 years and 89 children over 14 years of age were found attending school. In 40 cases, children were kept out of school some time during the year on account of a lack of the necessary clothing. Of these, 7 were white and 33 were colored children.

THE BUSINESS RELATIONS OF WAGE-EARNERS.

By James Bronson Reynolds.

In proportion as wealth increases devices for its protection increase in number, quality and efficiency. As wealth diminishes its safeguards diminish. When extreme poverty is reached, the supposed agencies of protection are frequently not only non-protective, but actually predatory. Among such are employment agencies where the wage-earner seeks work; pawn shops and loan companies for the wage-earner's borrowing; industrial insurance companies and mutual benefit societies for his saving, and instalment-payment concerns where he purchases on credit.

Believing that the regulation, protection and promotion by the government of these instrumentalities are quite as important to the industrial class as the protection of the home and the work shop through sanitary and factory legislation, this Commission has endorsed the recommendations made to the President by the writer, that a new Department of Housing and Labor be created to have direct and complete supervision of these business enterprises. This proposed Department would not merely exercise the powers of restraint at present entrusted chiefly to the police, but in addition would promote efficiency of service.

In view of the recommendation above mentioned, it is appropriate to indicate the present condition of these enterprises and to state the character and extent of the improvements advocated.

1. Employment Agencies. There were formerly about twenty-five employment agencies in the District. They were nominally under the control of the police, but a careful investigation showed that the police gave them very slight attention unless specific complaints were presented. Most of these agencies were indifferent to the character and occupation of the employers to whom they sent employees. This was especially true in regard to domestic agencies. The agencies which placed laborers took advantage of the applicants through fraud and misrepresentation and were careless in the fulfillment of their obligations to employers and employees.

The present employment agency law, passed in 1907, while inadequate in some respects, has produced a decided improvement in the service and paved the way for further progress. At present there are only eleven licensed employment agencies. Before taking out a license an agent must give a bond and furnish evidence of ability to carry on the business in proper manner. The character of the applicant is investigated by the police department. These agencies have been inspected at frequent intervals in the past, and with the beginning of the new license year the inspection will be made monthly. Complaints against agencies under the present law are investigated by the District Commissioners. During the past year nine hearings were granted to persons bringing charges against employment agencies.

This service is probably as good as could be obtained under the existing law, but there are two serious defects in the law.

First. Supervision by the police is inadequate. The work of the police must inevitably be confined to penal offenses. The regulation and supervision of the efficiency of employment agencies is necessary and should be performed by some properly constituted public authority.

The effective distribution of labor is of such supreme importance to the entire community that either employment agencies must receive competent public supervision, or the European method of government employment agencies, such as those of France and Germany, should be adopted. This commission has preferred to adopt the more conservative alternative.

Second. Complaints should be tried not by the head of the District government, as at present, but by the official having direct oversight of the agencies. If the proposed department of Housing and Labor were established, the chief of the appropriate bureau or the head of the department, both of whom would be closely in touch with the service, should be the proper parties to conduct investigations and trials.

2. PAWN SHOPS. There are at present eight pawn shops in the District of Columbia. The legal rate of interest charged is 3 per cent a month. The present law has some excellent features. A report on articles pawned is made daily to the police, and pawn shops are directly connected with police headquarters by an electric call bell. The records are open at all times to police inspection and a proper bond must be filed to secure the observance of the law and the recovery on judgments against pawn brokers.

The pawn shop is the only public agency for lending money to which the poor can resort, and since it is likely that recourse thereto will occur in times of extreme need, the terms of lending should be as moderate as circumstances will permit. It is commonly supposed that the pawn broker lends as little as possible on articles pawned. Careful inquiry and investigation reveal the fact that the high rate of interest disposes the pawn broker to lend as much as possible. As the pawn broker takes advantage of the improvidence of the borrower and derives his profit from the interest charge, he determines the amount to be advanced by his estimate of the likelihood of the redemption of the article pawned. If a lower rate of interest were charged, a smaller sum would be loaned, but a lighter burden would be imposed on the borrower. The experience of the Provident Loan Society of New York city, which has rendered most important service to the community, is suggestive. Regular New York pawn shops charging 3 per cent a month for the first six months and 2 per cent thereafter report that from 70 to 80 per cent of the articles pawned are redeemed. The Provident Loan Society, charging but 1 per cent a month, reports that from 98 to 99 per cent of articles pawned are redeemed. It is probable that the loans made by the Provident Loan Society on given articles are frequently less than corresponding loans made by the pawn shops. The policy of the Provident Loan Society, however, encourages redemption of valuable articles, while that of the average pawn shop encourages improvidence with ultimate heavy loss. Such features in the conduct of pawn shops merit the careful attention of public authorities quite as much as do the discovery and return of stolen articles, now the main concern of the police.

3. LOAN COMPANIES. There are no official statistics regarding loan companies in the District. Their number is variously estimated to be from fifty to eighty. They are wholly without public supervision, though Commissioner West states that "the question of licensing, regulating and inspecting these loan companies is, in my judgment, one of the most important matters to be accomplished." During the last session of the Congress a measure was drafted at the request of Commissioner West by the corporation counsel of the District and introduced in both Houses. Investigations made by Commissioner West showed that these companies sent out circulars to school teachers, department clerks and others, urging them to borrow money. The natural result of this solicitation was to stimulate the borrowing habit. It was also reported to this Commission by various chiefs of the National Government that their subordinates were frequently led, through the plausible representations of the companies, to reckless borrowing, leading to subsequent embarrassment. It is beyond question that such companies render a necessary service, but they should be so supervised and controlled by public authority that their transactions would be beneficial instead of debauching.

The borrowing of money for repayment on the instalment plan, found in the investigation of this Commission to be confined mostly to colored people, is a device of certain loan companies which merits the most careful scrutiny. It was not possible in all the cases investigated to ascertain the terms of repayment upon which loans were made, but a sufficient number was secured to show that exorbitant rates were charged.

4. INSURANCE. When the Department of Insurance was created January 1, 1902, the Superintendent found eleven companies undertaking industrial or sickness, accident and death insurance. Seven of these were District of Columbia corporations. They had 19,661 policies in force, representing $656,917 worth of insurance. The four foreign corporations had 4,978 policies in force, representing $179,587 worth of insurance.

The Superintendent at first refused to re-license them, but subsequently, recognizing that it would be a hardship to thousands of innocent policyholders to deprive them of their insurance, consented to grant licenses. At the present time nearly all of the companies refuse to pay the tax on their premium receipts, and consequently they are not licensed or examined pending the final decision by the court of their obligation to be taxed.

There is, however, supervision over the Metropolitan, Prudential and other large insurance corporations which obey the law as construed by the Department. The lack of law governing the industrial assessment companies is fully appreciated by the Commissioners, and various bills to remedy existing deficiencies have been introduced at the request of the Commissioners and of the Insurance Department. As insurance is one of the most notable agencies for the encouragement and practice of saving and thrift, its thorough supervision is highly in the public interest.

We also believe that the Friendly or Mutual Benefit Societies which are under public supervision in most European countries should be under government inspection in the District. Such inspection would undoubtedly be in the interest and to the advantage of the members of such societies, but as many organizations prefer their independence without interference, rather than the protection afforded by government supervision, it might be sufficient to provide that the Superintendent of Insurance should have power to inspect and report the condition and solvency of such organizations upon the request of the officers or of a certain number of members paying dues and eligible to benefits.

5. INSTALLMENT PAYMENTS. The purchase of articles on the installment plan offers undeniable advantages to people with limited means, and especially to those beginning housekeeping with small capital and

no reserve. It must, therefore, be regarded as an established and valuable feature of the business relations of the wage-earning class. Abuses under the system are, however, not infrequent and impositions are often practiced. Some measure of public supervision should be exercised over such transactions, at least to the extent of requiring that concerns doing business on this plan should be registered and their transactions subject to the scrutiny of the Department of Housing and Labor.

THE SCALE OF WAGES AND THE COST OF LIVING.

By GEO. M. KOBER, M. D.

The Bureau of Labor has conducted an investigation on the subject of wages based on a large number of establishments in the chief manufacturing and mechanical industries in the United States. The results are set forth in Bulletin 77, July, 1908.

The retail prices of food are shown in a succeeding article of the Bulletin. From these investigations we learn that, with the single exception of the year 1907, the scale of wages per hour has increased with the increased cost of living. In brief, wages in 1907 were 28.8 per cent higher than the average for the entire period from 1890-99, or 31.6 higher than in 1894, the year of lowest wages. The variation in the purchasing power of wages may be measured by using the retail prices of food, the expenditures for which constitute nearly half of the expenditures for all purposes in a workingman's family. From this study we learn that the retail price of the principal article of food weighted, according to family consumption of the various articles, was 20.6 per cent higher in 1907 than the average price paid for the 10 years period 1890-1899, or 26.3 per cent higher than in 1896, the year of the lowest prices during the same period. Compared with the average for the same year period the purchasing power of an hour's wages in 1907, as measured in the purchase of food, was 6.8 per cent greater than in the decade 1890-99.

The differences between 1906 and 1907 are set forth as follows: In the year 1907 the average wages per hour in the principal manufacturing and mechanical industries of the country were 3.7 per cent higher than in 1906, and the retail prices of food were 4.2 per cent higher in 1907 than in 1906, indicating that the purchasing power of an hour's wages, as measured by cost of food, was one-half of one per cent less in 1907 than in 1906.

Unfortunately all of these valuable data are based upon a study of industries in which skilled, and presumably organized, wage-earners are employed, who, it may be presumed, have insisted upon an equitable basis of wages. The writer fears that the great army of the working classes earning $10.00 or less a week have not participated to the same extent in the general advance of wages, and yet have had to carry the burden of increased cost of living.

The following table shows the articles for which the price in 1907 was higher than the average price for the decade of 1890-99, and also the articles for which the price in 1907 was lower during the same period:

	Relative Price 1907.		Relative Price 1907.
Bread, wheat	104.5	Apples, evaporated	124.6
Vinegar	104.5	Veal	125.0
Tea	105.3	Butter	127.6
Molasses	107.7	Mutton	130.1
Rice	108.5	Pork, salt, ham	130.7
Beef, salt	114.1	Chicken (year or more old) dressed	131.4
Milk, fresh, unskimmed	116.8	Corn meal	131.6
Flour, wheat	117.7	Lard	134.2
Beans, dry	118.8	Eggs	137.7
Beef, fresh, roasts	119.1	Pork, salt, dried or pickled	142.2
Beef, fresh, steaks	120.6	Pork, fresh	142.5
Fish, fresh	120.6	Pork, salt bacon	157.3
Potatoes, Irish	120.6	Sugar	99.6
Fish, salt	121.6	Coffee	95.0
Cheese	123.2	Prunes	88.4

It is especially deplorable that there should have been such a marked advance in the necessaries of life, such as meats, beans, potatoes, corn meal, and pork or bacon, which with bread constitute the foundations of a substantial diet for wage-earners.

The Bulletin does not take into consideration the items of clothing and dry goods. The cost of clothing, according to a recent report of the Chamber of Commerce, since 1900 has advanced 30 per cent, gingham 30 per cent, bleached cotton goods 60 per cent.

The tables on pages 197-200 are also of extreme interest; for instance, the table on page 197, based on the average food cost of 2,567 families, distributed over five geographical divisions in the United States, shows that the average cost of food for each family in 1890 was $318.20. In 1896, the year of lowest prices, it fell to $296.76, since which time it has gradually risen to $374.75 in 1907.

The tables on pages 199 and 200 show the purchasing power of a dollar from 1890 to 1907 of various articles of food of the grade used by the 2,567 workingmen's families. Some of the principal items are here reproduced in a condensed form:

	1890.	1907.
Fresh beef, pounds	7.81	6.47
Salt	10.06	8.59
Fresh pork	9.89	6.73
Fish	10.09	8.53
Eggs (dozen)	5.33	3.89
Milk (quarts)	16.74	14.40
Butter (pounds)	4.23	3.29
Cheese (pounds)	6.39	5.12
Lard (pounds)	10.86	7.95
Corn meal	46.57	35.39
Potatoes (bushel)	1.22	1.10

The following table shows the average expenditures of 2,567 workingmen's families for each of the principal items entering into the cost of living, and per cent of average total expenditure in 1901:

	Expenditure based on all families:	
Items of Expenditure.	Average.	Per cent of Total Expenditure.
Food	$326.90	42.54
Rent	99.49	12.95
Mortgage:		
Principal	*8.15	1.06
Interest	†3.98	.52
Fuel	32.23	4.19
Lighting	8.15	1.06
Clothing:		
Husband	33.73	4.39
Wife	26.03	3.39
Children	48.08	6.26
Taxes	5.79	.75
Insurance:		
Property	1.53	.20
Life	19.44	2.53
Organizations:		
Labor	3.87	.50
Other	5.18	.67
Religious purposes	7.62	.99
Charity	2.39	.31
Furniture and utensils	26.31	3.42
Books and newspapers	8.35	1.09
Amusements and vacation	12.28	1.60
Intoxicating liquors	12.44	1.62
Tobacco	10.93	1.42
Sickness and death	20.54	2.67
Other purposes	45.13	5.87
	$768.54	100.00

*Including interest paid by 13 families.

†Not including interest paid by 13 families, included in principal.

In Bulletin 93 of the Census of Manufactures, 1905, published in May, 1908, we find some interesting data of earnings of wage-workers. The investigation covers 3,297,819 wage-earners of which 79.4 per cent were men; 17.9 per cent were women, and 2.7 per cent were children. The average weekly earnings of all classes was $10.06. For men 16 years and over it was $11.16; for women $6.17, and for children under 16 years $3.46.

The greatest number of men is reported in the $12 to $15 per week group, and of women in the $6 to $7 group, while the greatest number of children is reported in the group receiving less than $3.00 a week.

The important fact revealed by these tables is that out of the total number of men included in the statistics 1,215,798, or 46.5 per cent, earned $10.00 or less a week. It would be extremely interesting to learn how many of this group were married men. At all events the writer believes that an explanation for the large army of women and children engaged in wage-earning occupations may be found in these figures. It is simply impossible for a family of five to maintain a decent standard of living on an income of $10.00 a week, and hence the wives and children are compelled to participate in the fierce struggle for existence.

Compensation of Government Employees.

Bulletin 94 of the Bureau of the Census, issued April 13, 1908, deals with statistics of 185,874 employees, of which 172,053 were males and 13,821 females. The largest class, viz., 43,790 persons, or 23.6 per cent of the total number, receive from $900 to $1,000 per annum; next in numerical importance is the class earning less than $720 per annum, represented by 35,331 persons or 19 per cent of the total; 11.7 per cent of the total earn $720, but less than $840 a year; 5.7 per cent earn between $840 and $900, and 18.4 per cent earn $1,000 but less than $1,200 a year.

The approximate average compensation is $948. Of the employees under 20 years of age, 71.2 per cent are paid at a rate of less than $720 and 13.6 per cent at a rate of $900, but less than $1,000, making a total in these two classes of 84.8 per cent.

Of the 25,351 Government employees residing in the District of Columbia, 12,901, or about one-half of the total, are married. The following shows the number of married employees in different salary groups:

Compensation.	Total Employees.	Married Employees.
Less than $720	6,501	2,028
$720 but less than $840	2,236	1,267
$840 but less than $900	602	327
$900 but less than $1,000	1,516	533
$1,000 but less than $1,200	2,453	1,113
$1,200 but less than $1,400	4,537	2,514
$1,400 but less than $1,600	2,469	1,552
$1,600 but less than $1,800	1,361	949
$1,800 but less than $2,000	1,153	906
$2,000 but less than $2,500	841	681
$2,500 and over	617	504
By piece work	1,046	493

Since the Bulletin contained no specific data on the question of the exact earnings of married men earning less than $720 a year, inquiries on this point were addressed to the Departments and the following table shows the number of married men employed in the respective Departments and the wage groups*:

	Salary $600-$700.	Salary $500-$600.	Salary Below $500.
Department of Agriculture	90	47	48
Treasury Department	188	115	2
Department of the Interior	205	19	14
Department of Commerce and Labor	42	3	..
War Department	122	..	1
Navy Department	54	..	2
Postmaster General	51	8	..
Department of the Interior	6	..	..
Department of State	..	3	..
Interstate Commerce Commission	13	..	..
	771	195	67

From this table it appears that there are 1,033 married men in the Government employ in this city earning less than $660 a year, 262 of whom receive $600 a year or less.

In addition to the foregoing, according to information kindly furnished by Commissioner West, and the disbursing officer, Mr. Wilson, there are 515 married employees in the District Government earning less than $500 a year; 450 married employees earning between $500 and $600, and 251 married employees earning between $600 and $720 a year.

A general survey of the situation justifies the conclusion that the cost of living has far outstripped the present rates of wages of men earning less than $720 a year and of salaried employees in general. This can only be remedied by an increase in wages or a decided decrease in the cost of the necessities of life. Since the latter is beyond the general control of wage-earners, except in so far as increased wages affect the cost of the products of labor, an increase in earnings amounting to at least 25 per cent appears urgently called for.

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*This does not include employees in the Government Printing Office and Navy Yard.

No effort should be spared to improve the standards of living of poorly paid wage-workers, especially of married men earning less than $2.00 a day. Justice likewise demands an increase of 25 per cent in the pay of salaried employees, especially where no such increase has been made during the past ten years, in order to compensate for the increased cost of living.

It has come to the knowledge of the Committee that a large number of employees in the Navy Yard who have purchased homes and own an equity in the property, are likely to suffer financial losses should the intentions of the Department to have the work done elsewhere and reduce the number of employees here be carried out. This should be avoided, if possible, on account of the evident hardships involved. It is believed that the best interests of the service and of wage-workers would be subserved if a reasonable assurance of permanent employment could be given.

In the sociological study of our least resourceful neighbors we find ample food for reflection. We encounter families who, although the husband earns $2.50 a day when he works, are on the borderland of dependency, because he takes three drinks of whiskey a day at 5 cents each and consumes 25 cents' worth over Sunday, which means not only an expenditure of $59.80 a year for drink, but also considerable loss of work on account of preventable illness.

While the conditions as a whole in our family groups whose income is less than $700 a year indicate a fierce struggle for existence, some splendid examples of neat and healthful homes, of thrift and happiness, could be cited for the emulation of less competent neighbors. The explanation is to be found in the fact that the parents lead a strictly temperate life, the mother is a good homemaker and anxious to better the future of her children, and her spirit of economy, thrift and ambition animates every member of the household. These principles should be inculcated into the minds of every child. An attempt has been made in several cities to introduce the Provident Stamp Saving System into the public schools. There can be no question that all such efforts, and the establishment of Postal Savings Banks, would stimulate provident habits. If it is possible for the agents and Friendly Visitors of the Associated

Charities to collect over $12,000 a year in this city from the least resourceful people as Stamp Savings Deposits for emergency purposes, there is no good reason why the great army of better-paid wage-earners, including salaried employees, should not cultivate similar habits of thrift and economy. While it is true that a goodly number have established their homes and are gradually paying for them, it is equally true that in these days of inordinate desire for pleasure, dress and social rivalry, a very discreditable number live wholly beyond their income and sooner or later fall into the hands of the "loan and salary sharks."

SUPPRESSION OF USURY IN THE DISTRICT OF COLUMBIA.

INTRODUCTION—*By* GEO. M. KOBER, M. D.

In view of the great number of cases of exorbitant rates of interest charged by salary and loan sharks which have come under the notice of the writer in connection with the Associated Charities, and also in our sociological study of families, it was deemed desirable to secure additional information on the subject with a view of formulating suitable recommendations for the suppression of the evil. Mr. Charles F. Weller, of the Associated Charities, and Mr. George S. Wilson, of the Board of Charities, referred in their discussion of the subject to the efforts of the "Society for Savings" to bring about a more tolerable state of affairs. In a number of interviews with officers of that society it was learned that they had entered the field, for which there was an urgent need, with the hope of ameliorating the condition of a large number of government employees by offering a better service at a reasonable price. The society found itself handicapped, however, by engaging in a business which can not be carried on at the present legal rate of interest (6 per cent), and also because good citizens do not care to invest funds which are loaned in violation of the law. The officers, anxious to extend the usefulness of the society and at the same time to conduct a strictly legitimate business, have made a careful study of the remedial legislation in other States, with a view of promoting similar legislation in the District of Columbia.

The principles embodied in modern legislation of this class are based upon the theory that money-lending concerns are a necessity; that small loans of this character can not be made at a less rate of interest than 2 to 3 per cent a month during the first year of the loan; that legalization of such rates will attract the capital of reputable citizens and stimulate wholesome competition, which will ultimately result in the reduction of the interest rate to about 1 per cent per month. From the experience of the Provident Loan Society of New York, conceived and managed as a true business philanthropy, it is apparent that a business in small loans can not now be conducted, except as a purely charitable proposition, at less than 1 per cent per month.

This subject is one of great importance to a very large number of officials and employees of the Government and of wage-earners in general. The writer, therefore, requested Mr. J. T. Exnicios, the manager and treasurer of the Society for Savings, to present the result of his study of existing conditions in this city, and of the most enlightened legislation which has been enacted in Massachusetts, New York, and elsewhere to safeguard this unfortunate class of borrowers against the vicious practices employed by unscrupulous concerns. This he has done in a very satisfactory and comprehensive manner. From a careful study of existing evils the writer feels convinced that the bill framed by the commissioners and known as H. R. 11772 and S. 2296 will, if enacted with a few minor amendments, have a most salutary effect. The amendments suggested by Mr. Exnicios are in line with legislation in other States. One of these is the reduction of a license tax from $1,000 to $100 per annum. The tax in Massachusetts is only $50 a year, but the law requires that all examinations of the affairs of such concerns made by the bank commissioners of the State shall be at their expense. New York, Rhode Island and Maryland require no license tax.

It is very evident that all such charges are placed by indirection on the borrower. For this reason, no doubt, the recorders' fee on chattel mortgages in Massachusetts is only 75 cents, and no notarial certificate is required on this class of mortgages, while the charges in this jurisdiction amount to $2.85, which greatly increases the cost of small loans.

The provisions of the bill, on the whole, are excellent. Sections 4 and 5 are especially commendable, as they require a register to be kept of all loans and transactions subject to official inspection. The execution of such a law, in order to safeguard against abuses, requires careful official supervision, such as contemplated by the recommendations to the President April 29, 1907, of Mr. James B. Reynolds in the creation of a bureau of labor.

THE USURY EVIL IN THE CITY OF WASHINGTON.

By J. T. EXNICIOS.

I. *The money borrower.*

In the city of Washington there is a very large number of persons who are unable to secure loans from banks, trust companies, or real-estate brokers, because having nothing in the form of assets except their labor or earning capacity to offer as security, or possibly household effects, and perhaps jewelry. These people might be divided into three classes or groups:

First, the government clerks and employees, who can offer nothing as security for money but their individual notes secured by the indorsement of their fellow-clerks.

Second, that class of persons who, for various reasons, do not care to have their needs made known to their friends on account of their standing in the community, and offer as security for money obtained their jewelry or other personal effects, and who, while possessing homes and furniture, hesitate to give a chattel mortgage on their household furniture, because of the publicity attendant upon the recording of such mortgages.

Third, that very large class of people who, not having steady employment or regular sources of income, and who, usually on account of the small wages earned, and having large families depending upon them, are unable to lay aside any savings to meet emergencies, are compelled to mortgage their household effects; and as such people nearly always need money and emergencies arise when they must have it quickly, they instinctively turn to the only source open to them, the loan shark.

The money lender exists here because he is needed; and renders an indispensable service to those whose living depends on the workshop, the office, the city, or the National Government, where men and women are earning salaries and wages. Salary earners are a never-failing source of income and support to him. He is particularly active among clerks in every department and bureau of our Government, among school-teachers, firemen, policemen, and other city employees, the newspaper office and the railroad office, but more especially among the laboring class, where he not only trades and fattens on their necessities but on their ignorance.

The cruel part of the whole system is the pettiness of the loans made to the laboring class. The loan seldom exceeds $25, and the need arises from sickness or trouble in the workman's family. His pay is small, just enough to live on, he may be going through that period in the life of a family when children are born, or when they are being educated, the expenses come closer to the danger line. Wife or child may fall ill and an extra outlay has to be met; other expenses, such as rent or grocery accounts, get behind, creditors begin to press, the man is worried and miserable and seeks relief from the only source at his command, the loan shark, whose advertisement offers money on easy payments and long time. He calls on the advertiser, anxious, flustered, disheartened, is received cordially and assured suavely that such difficulties are common and of daily occurrence, told to call again; his record is investigated meanwhile and his household furniture appraised. On his return he secures the small sum needed, signs some papers "as a matter of form," and is tied hand and foot for perhaps years. Very few attempt to evade these obligations, and as a consequence the loan sharks have very few occasions for bringing suit to enforce payment of these loans to the last penny. He indulges in threats, but rarely executes them, for his great dread is publicity.

II. *The money lenders and their methods.*

There are many money lenders and money-lending concerns in Washington (about 72), with an invested capital of approximately a million dollars, loaning money at exorbitant rates of interest upon mortgages of furniture and household effects, other personal property, and indorsed notes. The rate of interest charged varies very much; often the rate is as low as 10 per cent per month; sometimes as high as 25 per cent, and occasionally even a higher rate of interest is exacted. The following are a few of the many advertisements which can be found in our daily papers:

Potomac Guarantee Loan Company, 925 *F street, N. W.*

$10 for one month costs $0.60 (or 72 per cent per annum).
$20 for one month costs $1.05 (or 63 per cent per annum).
$30 for one month costs $1.45 (or 58 per cent per annum).
We also make a small charge for appraising property, etc.

Union Loan and Trust Company, 810 *F street, N. W.*

$10 for one month costs $1.50 (or 180 per cent per annum).
$20 for one month costs $2.25 (or 135 per cent per annum).
$25 for one month costs $2.50 (or 120 per cent per annum).

Mutual Loan and Trust Company, 913 *G street, N. W.*

35 cents a week pays interest and principal on a $10 loan.
50 cents a week pays interest and principal on a $15 loan.
75 cents a week pays interest and principal on a $20 loan.
90 cents a week pays interest and principal on a $25 loan.
$1.50 a week pays interest and principal on a $50 loan.
$2.75 a week pays interest and principal on a $100 loan.

Now, these sums are paid by the borrower for a period of fifty-two weeks, hence, the cost of $10 is $8.20, or 161 per cent per annum; $15 is $11, or 140 per cent per annum; $20 is $19, or 180 per cent per annum; $25 is $21.80, or 171 per cent per annum; $50 is $28, or 109 per cent per annum; $100 is $43, or 83 per cent per annum.

The Surety Loan Company, Ninth and F Streets, N. W., whose charges are on $10 for one month, $1; on $15 for one month, $1.50; on $20 for one month, $2. That is 10 per cent per month, or 120 per cent per annum. "No more, no less," to quote their advertisement. Added to these various rates are the charges for notary fees, recording mortgages, etc., running from $3 to $10.

Borrowers in many instances pay this heavy interest for months, and even for years, without decreasing the amount of the original debt, and often lose the property mortgaged by them, even when they have paid the amount of the principal borrowed with lawful interest, for under such rates a borrower can seldom pay up the principal of his loan, but goes on, year after year, paying this heavy interest, often in the end to have all he possessed taken from him, when the lender demands his principal.

Some of these concerns operate two or three companies, located at different addresses and under different names, and incidentally suggest to the borrower that, being unable to loan more than a part of the sum desired, they might succeed in securing the additional amount by applying to ———, furnishing the address of one of the other offices, when, after paying over again the usual charges for recording, notary fee, appraisement, etc., the borrower receives the amount necessary to make up the original sum asked for. We have in mind a particular case where the sum required was $30 on furniture. After going to three of these (allied) concerns the borrower secured the amount, $10 at each place, and paid the regular fees at each place.

At a hearing before the subcommtitee on judiciary of the Committee on the District of Columbia, United States Senate, May 6, 1908, on various bills introduced for the suppression of usury in the District of Columbia, the testimony of Senator Gallinger, Commissioner Macfarland, Mrs. Charlotte Everett Hopkins, all point to the grossest forms of abuses and exorbitant rates of interest which in the opinion of Senator Gallinger "no community ought to permit any one to exact from poor people."

All the cases cited differ only in degree, not in kind, and how many of them there are in any one year no one can ever tell, but there are thousands of loans made annually and, as the profits must be enormous, the suffering entailed must be in due proportion. These conditions have continued for a number of years and naturally have grown worse, and, though staggering and almost incredible, they are borne out by facts on record.

The foregoing statement also covers fully the abuses that were wont to exist in the States of New York, Massachusetts, Rhode Island, and Maryland until public opinion through the legislatures of these States enacted laws which put a stop to the evil practice.

III. *Means of prevention tried in Washington since 1905.*

In January, 1905, there was incorporated in this city the Society for Savings of Washington, modeled after similar concerns in a number of the States, for the purpose, among others, of lending money to deserving persons on indorsed notes. It was never for a moment contemplated that the new venture should be in any sense a charity; in fact, it was realized that to lend money as a work of charity would fail to reach the very class of persons whom it was desired to afford a means of relieving a temporary embarrassment, namely, persons who, while not able to obtain loans from banks, trust companies, or real-estate brokers, are able and willing to pay reasonably for the accommodation.

The capital stock was fixed at $50,000, most of which is now paid in. In the beginning, after considerable effort, a sum of about $7,500 was raised and operations were started. The loans made were necessarily small, averaging $25, and never exceeding $50, to any one person upon indorsed notes and confined almost exclusively to clerks in the various government departments, and at a rate of interest of 3 per cent per month. After the first year, and upon increasing the capital employed, the rate was reduced to 2½ per cent per month, and is now 2 per cent per month, with a small charge according to the amount loaned, in some cases 25 cents, as upon a $25 loan, which costs 75 cents for one month, but never exceeding $3 in any one year, and this latter sum is charged only when loans are made on household goods (including charges of every character, among which is $2.35, the actual fee for court recording, and 50 cents for notary fee, or $2.85), which feature of the business was adopted about the beginning of this year. In some very deserving cases a charge of 1½ per cent per month has been made, and only one-half per cent a month in one case, that of a young man, a messenger in one of the departments, who became deeply involved with a number of money lenders to the extent of about $500. * * *

Much good, it is believed, has been done by this society, and a great deal more could be done were it possible to secure the funds needed; but its business being what may be termed "outlawed," the directors have labored under a handicap that is almost disheartening.

Small sums of money can not be loaned at the legal rate of interest (6 per cent), pay operating expenses, no matter how economically the business is conducted, stand the inevitable losses through uncollectible notes, and pay a fair dividend on the capital invested. This has been demonstrated time and again in every State of the Union and in foreign countries as well. If there could be any doubt of the correctness of this statement, legislation which has been enacted in many of the States will prove its truth. This legislation will be more particularly referred to further on.

IV. *Remedy proposed.*

The most effective way to get rid of the loan and salary shark is to meet him on his own ground. Legislation will not kill him. In trying to exterminate him, legislation is apt to abolish the service and furnish nothing to replace it.

The logical way to get rid of him is to supply a better service at reasonable rates. Along this line some very effective work is now being done under protection of the law in other cities and could be done here by the enactment of a suitable bill, which has been drafted by the District Commissioners and is known as S. 2296 and H. R. 11772. Under its provisions the business will become legalized, the stigma which now attaches to those carrying on a business not strictly lawful would be wiped out, and a better class of our citizens would engage therein, more capital would be attracted, and there would be more competition, with the consequent lowering of the interest charged and a resulting benefit to the borrower and the community.

A BILL To regulate the business of loaning money on security of any kind by persons, firms, and corporations other than national banks, savings banks, and trust companies and real-estate brokers in the District of Columbia.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter it shall be unlawful and illegal to engage in the business of loaning money on any security of any kind, direct or collateral, tangible or intangible, without procuring license; and all persons, firms, joint-stock companies, voluntary associations, and corporations engaged in said business shall pay a license tax of one thousand dollars per annum to the District of Columbia.

SEC. 2. That applications for licenses to conduct such business must be made in writing to the Commissioners of the District of Columbia, and shall contain the full names of applicants, if natural persons, and the full names of the officers and directors, by whatever name known, of corporations, companies, and associations, the addresses of all persons named therein, and the place where such business is to be conducted, and such other information as the said commissioners may require. Every license granted shall date from the first of the month in which it is issued and expire on the thirty-first day of the following October. Every application shall be filed not less than one week prior to the granting of such license, and notice of the filing of such application shall be posted in the office of the assessor of the said District. Protests may be made by any person to the issuing of such license, and when such protests are filed with the said commissioners the latter shall give public notice of and hold a public hearing upon such protests before issuing such license. The said commissioners shall have power to reject any application for license for failure to observe this act, and for such failure to suspend or revoke any such license for cause shown, after notice and hearing.

SEC. 3. That each application shall be accompanied by a bond to the District of Columbia in the penal sum of five thousand dollars, with two or more sufficient sureties, and conditioned that the obligor will not violate any law relating to such business. The execution of any such bond by a fidelity or surety company authorized by the laws of the United States to transact business therein shall be equivalent to the execution thereof by two sureties, and such company, if excepted to, shall justify in the manner required by law of fidelity and surety companies. If any person shall be aggrieved by the misconduct of any such licensed person, firm, corporation, company, or association, and shall recover a judgment therefor, such person may, after a return unsatisfied either in whole or in any part of any execution issued upon such judgment, maintain an action in his own name upon such bond herein required in any court having jurisdiction of the amount claimed. The Commissioners of the District of Columbia shall furnish to anyone applying therefor a certified copy of any such bond filed with them upon the payment of a fee of twenty-five cents, and such certified copy shall be prima facie evidence in any court that such bond was duly executed and delivered by the person, firm, corporation, company, or association whose names appear thereon.

SEC. 4. That every person, firm, corporation, company, or association conducting such business shall keep a register, approved by said commissioners, showing, in English, the amount of money loaned, the date when loaned and when due, the person to whom loaned, the property or thing named as security for the loan, where the same is located and in whose possession, the amount of interest, all fees, commissions, and renewals charged, under whatever name. Such register shall be open for inspection to the said commissioners, their officers and agents, on every day, except Sundays and legal holidays, between the hours of nine o'clock in the forenoon and five o'clock in the afternoon.

SEC. 5. That no such person, firm, corporation, company, or association shall charge or receive a greater rate of interest or discount upon any loan made by him or it than two per centum per month and a sum not exceeding three dollars for the first examination of the property to be mortgaged, or the investigation of the credit or responsibility of indorsers or sureties when an indorsed note is taken as security, and for drawing the necessary papers, which charge shall include all services of every character in connection with the loan, except upon the foreclosure of the security, and no additional sums, either in the way of bonus or otherwise, shall be required or exacted of borrowers; nor shall it be lawful to divide or split up loans under any pretext whatsoever for the purpose of requiring or exacting any other or greater charge than herein prescribed. The foregoing interest and charge may be deducted from the principal of the loan when the same is made. No such loan greater than five hundred dollars shall be made to any one person.

SEC. 6. That the enforcement of this act shall be intrusted to the Commissioners of the District of Columbia. Complaints against any licensee or applicant shall be made in writing to the said commissioners, and reasonable notice thereof, not less than one day, shall be given to said licensee or applicant by serving upon him a concise statement of the facts constituting the complaint, and a hearing shall be had before the said commissioners within one week from the date of the filing of the complaint, and no adjournment shall be taken for longer than one week. A daily calendar shall be kept of all hearings by the said commissioners, which shall be posted in a conspicuous place in their public office for at least one day before the date of such hearings. The said commissioners shall render their decision within eight days from the time the matter is finally submitted to them. Said commissioners shall keep a record of all such complaints and hearings, and may refuse to issue and shall revoke any license for any good cause shown, within the meaning and purpose of this act; and when it is shown to their satisfaction that any licensee or applicant under this act, either before or after conviction, is guilty of any conduct in violation of this law, it shall be the duty of the said commissioners to revoke or reject the license of such licensee or applicant, but notice of the charges preferred shall be presented and reasonable opportunity shall be given said licensee or applicant to be heard in his defense. Whenever for any cause such license is revoked, said commissioners shall not issue another license to said licensee until the expiration of at least six months from the date of revocation of such license.

SEC. 7. That any violation of this act shall be punished by a fine of not less than five dollars and not greater than two hundred dollars. The said commissioners shall cause the corporation counsel to institute criminal proceedings for the enforcement of this act before any court of competent jurisdiction.

SEC. 8. That nothing contained in this act shall be held to apply to the legitimate business of institutions which are members of the Bankers' Association of the District of Columbia, building and loan associations, or to the business of pawnbrokers or real-estate brokers as defined in the act of Congress of July first, nineteen hundred and two.

SEC. 9. That the Commissioners of the District of Columbia are hereby authorized and empowered to make all rules and regulations necessary in their judgment for the conduct of the said business and the enforcement of this act in addition hereto and not inconsistent herewith.

SEC. 10. That all acts and parts of acts inconsistent herewith are hereby repealed.

SEC. 11. That this act shall take effect from and after its passage.

V. *Amendments proposed and approval of the bill.*

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That herafter it shall be unlawful and illegal to engage in the business of lending money on any security of any kind, direct or collateral, tangible or intangible, without procuring license, and all persons, firms, joint stock companies, voluntary associations, and corporations engaged in said business shall pay a license tax of one thousand dollars per annum to the District of Columbia.

First, amend this section by inserting after the word "money," in line 4, the words "upon which a rate of interest greater than six per cent per annum is charged," so that it shall read: "the business of loaning money, upon which a rate of interest greater than six per cent per annum is charged," etc.

Second, substitute "one hundred" for "one thousand" in line 8, so that it shall read: "business shall pay a license tax of one hundred dollars per," etc.

Reasons.—All States which now have laws governing the loaning of money specifically state in the acts that all persons, firms, etc., loaning money at more than the legal rate of interest, etc., which shows that the provision has been carefully looked into and deemed necessary. It might be said in this connection that Senator Johnston and Hon. J. M. Thurston stated they "thought it might be a wise provision," at the hearing before the subcommittee on judiciary of the Committee on the District of Columbia, May 6, 1908, at which the former was present as a member of said committee, and the latter as attorney representing some money lenders.

As to the amount of license tax, the State of Massachusetts exacts a tax of only $50 per year, but requires that all examinations of the affairs of these concerns made by the bank commissioners of the State shall be at their expense. The State of New York does not require a license, nor does the State of Rhode Island, nor the State of Maryland.

That $1,000 per annum should not be exacted as a license charge or tax seems to require no argument. It would be wringing from the lenders a sum which is much too large, and would hold an inducement for some of them to place this charge by indirection on the borrower. Further, Commissioner West states: "Though this tax of $1,000 was inserted, they were not insisting upon that amount, and it might well be reduced." (Senate hearing, May 6, 1908, p. 21.)

Section 2. This section is in line with the practice and laws in force in States hereinbefore mentioned.

Section 3. Same reason as applied to section 2.

Section 6. Same as section 2.

Sections 9, 10, and 11. Same as section 2.

SEC. 4. That every person, firm, corporation, company, or association conducting such business shall keep a register approved by said commissioners, showing in English the amount of money loaned, the date when loaned and when due, the person to whom loaned, the property or thing named as security for the loan, where the same is located and in whose possession, the amount of interest, all fees, commissions, and renewals charged, under whatever name. Such register shall be open for inspection to the said commissioners, their officers and agents, on every day, except Sunday and legal holidays, between the hours of nine o'clock in the forenoon and five o'clock in the afternoon.

The only way to regulate this business is through publicity, for laws, no matter how drastic their provisions, can and will be evaded; but when the people who carry on this business are compelled to lay bare to the proper officials each and every transaction they have engaged in, you then strike at the root of the evil, and are in a position to apply the needed remedy. It has been stated that this section is impracticable, or, if practicable, it would involve considerable expense and labor. We deny this for the reason that now, and for many months past, the Society for Savings has in daily use such a register, and after experience feels that it is the only method whereby it can be seen at a glance that charges have been paid by the borrower, and for what purposes. We think, though, this section would be strengthened were it amended so as to require an annual statement in the form of a trial balance of its books, on the 31st day of December in each year, specifying the different kinds of its liabilities and the different kinds of its assets, stating the amount of each, together with such other information as may be called for. This statement should be furnished to the District Commissioners on or before the 20th day of January in each year by each individual or company engaged in this business, and they should also print this statement or trial balance in at least one newspaper of general circulation in Washington, in such manner as may be directed by the District Commissioners.

Inspection by State officials designated by law and annual reports of the business are required in New York, Massachusetts, and Rhode Island, likewise the publishing of annual reports.

Sec. 5. That no such person, firm, corporation, company, or association shall charge or receive a greater rate of interest or discount upon any loan made by him or it than two per centum per month, and a sum not exceeding three dollars for the first examination of the property to be mortgaged, or the investigation of the credit or responsibility of indorsers or sureties when an indorsed note is taken as security, and for drawing the necessary papers, which charge shall include all services of every character in connection with the loan, except upon the foreclosure of the security, and no additional sums, either in the way of bonus or otherwise, shall be required or exacted of borrowers; nor shall it be lawful to divide or split up loans under any pretext whatsoever for the purpose of requiring or exacting any other or greater charge than herein prescribed. The foregoing interest and charge may be deducted from the principal of the loan when the same is made. No such loan greater than five hundred dollars shall be made to any one person.

The provisions of section 5 restricting the amount of such loans and legalizing a rate of interest not higher than 2 per cent per month, and a fixed charge not in excess of $3 for examining the property to be mortgaged and drawing the necessary papers, are taken from the acts of State legislatures, which will be now noticed at some length, as also will be the business of some of the corporations operating under them.

By the laws of the State of New York, chapter 326, Laws of 1895, as amended by chapter 706, Laws of 1895, entitled "An act to provide for the incorporation of associations lending money on personal property, and to forbid certain loans of money, property, or credit," it is provided:

Sec. 3. * * * It [every such corporation] shall be entitled to charge and receive upon such loan made by it without the actual delivery to it of the property pledged or mortgaged, which charge shall include all services of every character, in connection with said loan, except upon the foreclosure of the security, interest or discount at a rate of not exceeding three per centum per month for a period of two months or less, and not exceeding two per centum per month for any period after said two months; and also a sum not exceeding three dollars for the first examination of the property to be pledged or mortgaged and for drawing and filing the necessary papers.

It will be observed that section 5 of the proposed bill is copied substantially from this law.

VI. *Methods in force in New York, Massachusetts, Rhode Island, and Maryland.*

The laws of the above-named States will now be noticed at some length, as will be also the business of some of the corporations operating under them.

NEW YORK.

The Provident Loan Society of New York was organized under chapter 295 of the Laws of 1894. The New York legislature granted a special charter to carry on this business to Otto T. Bannard, Charles C. Beaumen, Henry R. Beekman, William L. Bull, Frederic R. Coudert, Charles F. Cox, John D. Crimmins, R. Fulton Cutting, Robert W. de Forest, William E. Dodge, Charles S. Fairchild, David H. Greer, Abram S. Hewitt, James J. Higginson, Adrian Iselin, Jr., D. Willis James, John S. Kennedy, Seth Low, Solomon Loeb, Alfred B. Mason, Victor Morawetz, J. Pierpont Morgan, Oswald Ottendorfer, Jacob H. Schiff, Gustave H. Schwab, Charles S. Smith, James Speyer, Walter Stanton, J. Kennedy Tod, Abraham Wolff, and Cornelius Vanderbilt, together with such persons as they may associate with themselves. These gentlemen are among the most prominent and substantial in the city of New York. Section 3 of said act reads as follows:

> Said society shall be entitled to act as pawnbroker, and shall be subject to and entitled to all the benefits of all the provisions of the laws of this State concerning pawnbrokers, except that it shall not be required to obtain a license or file a bond.

This society is allowed under the law to charge interest at the rate of not exceeding 3 per cent per month, and, notwithstanding its stupendous capital and the fact that it is classed as a benevolent society, it actually charges as interest on all loans made 1 per cent per month. From the thirteenth annual report of said society for the year 1907 it appears that the capital employed at the close of the year 1907 was $5,001,586.14, that the amount loaned during said year was $10,601,000, and that the average single loan was $37.46. On page 11 of the report of 1905, in advocating making pawn offices accessible to the working classes, this statement will be found:

> The need of the working classes, who form the great army of borrowers, can best be met by making the pawn office accessible to them. Convenience of access is even more important than a low rate of interest. This is evidenced by the great growth of our own Eldridge street branch, on the East Side, where the transactions already largely exceed those of the Fourth avenue office. It is also evidenced by the fact that many prefer to patronize an adjacent pawnbroker, whose rate of interest is much higher than that charged by this society, rather than go a little out of their way to one of our offices. The benevolent purpose of the society will be far better effectuated by an increase in the number of our branches than by any lowering of the rate of interest, even if such a course were otherwise desirable. Most loans are, or are intended to be, for a short period when made. Car fares and loss of time count for more than a higher interest charge.

Could there possibly be any stronger argument as to the necessity for legalizing a reasonable rate of interest on such loans than the operations of this society? It has a vast capital, most of it made up by gifts or bequests and contributions from the rich, and is operated not primarily for profit, and yet it actually charges 1 per cent per month on its loans, and is allowed by law to charge 3 per cent per month.

The report of the president for 1907 shows that—

> In 1895, our first full year, we had one small loaning office which made 20,804 loans, amounting to $377,845; in 1907, with six loaning offices in operation, 283,045 loans, amounting to $10,601,557, were made. In 1895, 18,214 loans, amounting to $322,596, were repaid, whereas in 1907 the number was 254,663, amounting to

$9,840,379. Again, the interest earnings, amounting in 1895 to $23,847, reached in 1907 the large sum of $564,534. The enormous attention to detail involved in the successful conduct of this businss becomes apparent when one considers that the average of the loans made in 1907 was $37.46.

The same comparison holds good as to the personnel and organization of the society. From a rented office with a staff of four or five people, employing $100,000 capital, it has become a great fiscal institution of $5,000,000 capital, a large well-trained staff of about sixty employees, with six offices. * * *

Of course every one will realize that the smaller the loan on personal property the less the margin of profit, as the percentage of operating expenses is proportionately larger when a small loan is made than when made in large amounts. The executive committee decided that on November 1, 1907, in view of the increased cost of capital and the greater cost of handling an increasing volume of small loans (192,060 being for $25 and under, 91,754 being for $10 and under, and 44,450 being for sums of $25 to $50) all renewals, as well as new loans, should be at the interest rate of 1 per cent per month or fraction thereof, except those repaid within two weeks from date of making, when one-half per cent only would be charged.

Mr. Frank Tucker, the vice-president and executive officer, at a conference held with a committee of our Society for Savings of Washington, in July, 1908, stated that the handling of small loans at 1 per cent per month was purely a charitable proposition and so regarded by his society, but an absolute impossibility to any concern with a smaller capital, and submitted the following figures as proof:

Number of loans made 1907, 283,045.

Operating expenses, excluding dividends, $127,052.62, or a cost per loan of 45 cents.

Cost of $10 loan to society, 45 cents.

Dividend of 6 per cent per annum on $10, 60 cents.

A loan of $10 cost the society for one year, $1.05.

Ten dollars at 1 per cent per month earns the society for one year $1.20, or a loan of $10 for the first nine months merely earned its cost of handling, but that 2 per cent per month was more reasonable and a fair business proposition.

The Provident Loan Company, of Buffalo, was incorporated under the aforementioned act, and a reading of the annual reports of said company and of the other companies or societies hereinafter mentioned will be interesting to those who care to investigate further into this matter. The rate of interest charged by the Provident Loan Company, of Buffalo, is 3 per cent per month for the first month and 2 per cent for each month thereafter, and a charge of $3 for examination of property and recording of mortgages, etc., the rate allowed by law. It is said in one of the annual reports of this company that "its purpose is the same as that of the Workingmen's Loan Association, of Boston, founded by Robert Treat Paine in 1887, and its methods of business are closely patterned after those in use by that association." (See First Annual Report, September 9, 1895, to September 30, 1896.) The Workingmen's Loan Association, of Boston, was one of the pioneers in this line of business. The law under which it was incorporated and its operations will be alluded to further on.

MASSACHUSETTS.

By an act of the legislature of the State of Massachusetts entitled "An act to incorporate the Pawner's Bank," approved April 5, 1859, it is provided by section 4 that—

> The charge on all loans to cover expenses of every kind, including interest, shall be uniform, and not to exceed one and one-half per cent per month.

This act was amended by an act entitled "An act to amend the charter of the Pawner's Bank of Boston," approved June 21, 1869. Section 2 thereof reads as follows:

> The charge on loans, to cover expenses of every kind, including interest, need not be uniform, but may be regulated by the bank, but it shall in no case exceed two per cent per month.

This so-called bank is still in business, but it is now operated under the name of the Collateral Loan Company of Boston. The total amount of the loans made by it for the year 1905 amounted to $2,092,566.08. The average single loan was $22.78.

The Workingmen's Loan Association of Boston was incorporated by an act of the legislature of Massachusetts approved March 8, 1888, entitled "An act to incorporate the Workingmen's Loan Association." By this act a charter was granted to Robert Treat Paine, Charles W. Dexter, John S. Blatchford, Francis C. Foster, John D. W. French, I. Wells Clarke, George W. Pope, Charles H. Washburn, Robert Treat Paine, second, Thomas T. Stokes, and Henry R. Gardner, and their associates and successors. The association was authorized to loan money upon pledge or mortgage of goods and chattels and on safe securities of every kind, or upon mortgage of real estate. The capital stock of the association is $125,000. The amount of outstanding loans on April 1, 1908, was $215,826.64; the number of borrowers was 3,585, and the average single loan was about $60. (See the Twentieth Annual Report of the Workingmen's Loan Association, dated April 16, 1908.) In a pamphlet published by the Massachusetts board of managers, World's Fair, in 1893, entitled "Origin and System of the Workingmen's Loan Association," on page 5 appears the following statement:

> The charge for interest is 1 per cent per month. An additional charge is made on the making of each loan sufficient to cover all money expended in investigation and recording the mortgage, and to give the company in ordinary cases $1.65 for the time spent in appraisal and drawing papers. Nearly all of the loans of the company are made on chattel mortgage of furniture and household effects.

This has been amended and at the present time, October, 1908, the association, in addition to its regular rate of 1 per cent per month, charges for investigation, recording of mortgages, etc., the sum of $2.50 on loans under $50, $3 on loans of $50 to $250, and $5 on loans over $250; $1 is the cost charged for renewals. No loan is made for less than $25 on account of the cost of handling, which amounts to $3.77, although the cost of recording chattel mortgages in Massachusetts is but 75 cents, and no notarial certificate is required on this class of mortgages.

The association also charges 25 cents on loans under $50, and 50 cents on loans from $50 to $100, to compensate the association for the risk of loss of goods mortgaged, by fire, though no insurance policy is taken out on the goods mortgaged as security for such small loans. Thus it will be seen that the association receives interest on its ordinary small loans for short periods of time of at least 2 per cent per month, and sometimes more. Robert Treat Paine, of Boston, a gentlemen of national reputation, was the first president of this association, and he has been continuously re-elected to the same office to the present time.

In 1908 the legislature passed an act entitled "An act to regulate further the business of making small loans" (chap. 605, 1908), which act confers on the police commissioner of Boston, and upon the mayor in other cities, the power to make the rate of interest to be charged upon small loans of $200 or less, upon which a rate of interest greater than 12 per cent per annum is charged, and for which no security, other than a note or contract with or without indorsers is taken, having due regard to the amount of the loan and the time for which it is made.

It also fixed the charges or cost as follows:

> SEC. 3. * * * An amount not exceeding $2 if the loan does not exceed $25; not exceeding $10 if the loan exceeds $100; not exceeding $3 if the loan exceeds $25 but does not exceed $50; and not exceeding $5 if the loan exceeds $50 but does not exceed $100, may, if both parties to the loan so agree, be paid by the borrower or added to the debt, and taken by the lender as the expense of making the loan, and such amount shall not be counted as part of the interest on the loan. A greater amount than that above specified shall not be taken for such purpose, and any money paid, promised, or taken in excess of such amount shall be deemed to be interest.

Under the power conferred on the police commissioner of Boston, to make the rate of interest that may be charged on said class of small loans, for which no security is taken other than a note or contract with or without indorser, he has made the following rates:

> SEC. 3. Interest may be charged by persons licensed under this rule as follows: On loans not exceeding $50, at the rate of 36 per cent per annum; on loans of over $50, at the rate of 30 per cent per annum.

The license tax for this class of business is $50 per annum.

RHODE ISLAND.

By an act of the general assembly of the State of Rhode Island, passed February 28, 1895, entitled "An act to incorporate the Workingmen's Loan Association," it is provided that the rate of interest on loans to be made by said association "shall not exceed one per cent a month." (See sec. 4 of said act. This act was amended on May 27, 1897, and the rate of interest on such loans was raised not to exceed 2 per cent per month, which rate is still in force. Section 4 of said act as amended reads as follows:

> All loans shall be for a time fixed, and for not more than one year, and the mortgagor or pledgor shall have a right to redeem his property mortgaged or pledged at any time before it is sold, pursuant to the contract between said mortgagor or pledgor and said corporation, or before the right of redemption is foreclosed, on the payment of the loan and interest at the time of the offer to redeem. No loan of more than one thousand dollars shall be made to any one person. The rate of interest upon any loan made by said corporation shall not exceed two per cent a month. No dividend shall be paid in excess of six per cent per annum.

MARYLAND.

An act of the Maryland legislature of 1902, regulating the loaning of money when, as security for such a loan, a lien is taken upon household furniture and effects, musical instruments, typewriters, and sewing machines, authorizes a charge for the examination or valuation of property offered as security for a loan and the preparation of the necessary papers, as follows:

> On sums of $1 to $50, a charge of $5; on sums of $51 to $100, a charge of $6; on sums of $101 to $1,000, a charge of $6; plus 5 per cent of increase over $100; on sums of $1,001 and upward, a charge of $6, plus 5 per cent of increase over $100 and plus 2½ per cent of increase over $1,000.

The said act also authorizes the collection of the amount actually to be paid for recording papers, revenue stamps, and fire-insurance premiums. While all of the loans under this act only bear interest at the rate of 6 per cent per annum, it is plain that the fixed charges by law more than raise the actual rate of interest to 2 per cent per month on ordinary short-time loans.

HOW TO BENEFIT THE POOR IN THE SLUMS.

By Wm. F. Downey.

For many years the Board of Trade and other civic associations have shown a deep interest in the material improvements in Washington. Each year we have the reports of various committees on improvements, embracing the departments of public buildings, parks, bridges, harbors, streets, trees, sewers, manufactures and commerce, railroads, etc., in which recommendations are made that millions of dollars be appropriated for such improvements.

While it is very commendable of our citizens to use every means possible pertaining to the manufacturing and commercial progress, and material welfare of our city, we should not overlook that portion where the poor dwell in slums, alleys and courts, in unsanitary and uninhabitable abodes. We can not truthfully boast of, or take pride, in our Capital city until we improve the condition of our slum property and remove the festering plague spots, which are equally a menace to the health and morals of the community.

Our attention must be directed to these slums and plague spots where the poor are forced to live. As long as these sources of poverty and crime are allowed to exist in our city, and are tolerated by law, there is little use in attempting to reform them; such evil haunts are so many poison springs constantly throwing forth their putrid waters over our city and until they are purified all moral efforts will avail but little.

The surgeon who is called to treat a patient does not devote his services to the sound parts of the body, but immediately directs his attention to the diseased spot, so it behooves us to apply our remedies to the slums and plague spots of the community, where poverty prevails, immorality is rampant, and crime originates and flourishes.

We notice that the Health Authorities in every town and city in the land are endeavoring to prevent or check infectious diseases, and if anyone becomes infected, that one is immediately quarantined; similar precautions are taken in the case of steamers arriving in port with contagiously diseased patients on board. While this all-important attention is given to such cases, why should we permit greater evils to exist which spread their blasting effects through the community, and transfers the contagion from generation to generation, such as consumption and other diseases, emanating from immoral lives, due to dens of infamy, low saloons, etc. Unsanitary and uninhabitable dwellings where people are crowded together breed and spread considerable disease. For instance, many people live in these places at night, and work in homes all over the city during the day. In this way the disease germs are carried into many homes, endangering the health of our little ones and blighting the happiness of our people.

Much praise is due to Mr. Charles F. Weller, and those connected with the Associated Charities for the light they have thrown on the slum problem, and the aid they have rendered to those who dwell there; also the Washington Sanitary Housing Company, which has aided so many people of limited means to secure houses at moderate rental. Squalid shacks have disappeared from certain quarters and their sites are now occupied by habitable dwellings; the purpose which brought about this change is worthy of commendation. Every effort which elevates and improves land and houses is entitled to its meed of praise. But while the housing movements have benefited a class of people who are able to pay moderate rents, what has become of the unfortunates who dwell in shacks?

It is an easy matter to stigmatize the unfortunate with the names their depraved habits deserve, but what of their reform; has there been anything done to elevate them, to cleanse them, to withdraw them from their evil associates?

This is the work under present contemplation. These poor creatures should not be driven to desperation; we should see to it that means are available to effect their temporal, physical and moral welfare.

It may be a work meriting all praise to beautify a portion of the city in which we live, enhancing the value of property and elevating human life. Indeed, it will be cheerfuly conceded that such a work is deserving of the highest praise. But how incomparably better is the merit of the effort and the toil spent in uplifting frail members of the human family; they are for eternity, and should they not be impressed with the knowledge of the fact? "Whatsoever you do to the least of these, you do unto Me," said the Saviour of men.

Shacks and shanties may be transformed into residences and mansions, but they will crumble away. The depraved citizen of the slums is destined for eternity; he is made in the image of God; this being known should it not be glorious work to restore the image, which has been wellnigh obliterated by dissipation and sin? The merit of an undertaking is due to the object and the aim; judged by this canon, how supremely meritorious is the work of redeeming and uplifting those who have fallen away from their high inheritance as children of God, and who are held in the thrall of the base servitude. To beautify a city and to make habitable homes is a work of commerce and art; to uplift and fortify frail humanity is to co-operate with Christ in the work of redemption.

If the Government can build prisons for the criminals, almshouses for the poor, asylums for the afflicted and public schools, libraries, etc., on which millions of dollars have been spent, it would seem that in common sense and in logic there can be no condemnation for an application of the same solicitude to the aid of those who are in a condition of semi-paralysis, owing to economic conditions. A little Government aid extended to these unfortunates, in the form of a loan to build for them habitable dwellings would tend immensely toward their uplifting and improvement.

The home is the very foundation and corner stone of society, and should be particularly guarded against the contamination of all vice.

All unsightly and unsanitary property should be condemned and purchased by the government, improved in a uniform manner, and inexpensive and healthful habitations erected for the poor, who could rent or purchase these homes on installment plans, at low rates of interest. Should this be done, all would be benefited; for, not like money spent in the erection of prisons, poor houses, libraries, schools, etc., that never returns to the public exchequer, the money expended on such homes would return in the form of regular monthly payments, and this in turn could be used for the continuance and spread of the good work of elevating the masses.

It is manifestly unfair to exact exorbitant rents from the poorer classes; the poorer a man is the more he is at the mercy of the owner, and this is the very man the city should try to assist. Think of it! These families paying rent for shacks, which give a gross return to the owner of from 9 per cent all the way to 35 per cent; renters pay from $6 per month to $12.50, which bring in these large returns of interest. (See report of committee on building model houses in Washington, D. C., 1908.) The fact that these renters pay from $6 to $12.50 per month shows that they are among the poorest classes. It is the sick man who needs medicine, likewise the poor man needs assistance. In many instances there is little or no chance of his coming to the front without this assistance.

How many poor helpless creatures, born in the slums, would, if opportunity were given to them, develop, in a pure atmosphere, a noble manhood and womanhood, which would make them the pride of the country, instead of becoming or remaining a burden to the community? They might become some of the best citizens and brightest statesmen if their childhood days were rescued from unhallowed surroundings. This is no dream, but the actual experience of the writer, who has succeeded in helping numbers of individuals and families to become self-helpful, and rise to the highest grade of citizens.

We read in the newspapers of the day that eminent men, well qualified to speak on the subject, are making an outcry against the wasteful use of coal, iron and timber and predicting a famine of the same in future generations. While this subject is very commendable, I sincerely hope the day is not far distant when these distinguished people will also consider the temporal and moral welfare of the citizens, which I think should be regarded as the most important of all subjects, as it does not pertain only to the permanent and thorough improvement, and beautifying of our National Capital City, but pertains chiefly to the uplift of our citizens.

It is only the Federal Government which controls the affairs in the City of Washington, which could undertake such a necessary and meritorious work, by having an act passed by Congress giving power to appoint three men, an engineer, an architect, and a sanitary inspector, with power to condemn, purchase and improve property in squares having narrow minor streets, and alleys without proper openings. Many of such squares are crowded with unsanitary and uninhabitable dwellings, which make them a menace to health and morals of the unfortunate people who are forced to dwell there. This seems to be the only correct way to deal practically with this question, and it readily appeals to the intelligence and desire of every good citizen who has the welfare of our city and citizens at heart.

See the great advantages which would be derived from such an undertaking. The Commission suggested above, of three gentlemen, would first map out the improvements to be made in such squares, and after the condemnation of certain lots and parts of lots, then would erase all unsightly buildings from the land, so that the improvements could be made in a uniform manner by grading and beautifying the land, and erect houses on the most suitable plan. The streets in such squares should not be less than 40 feet wide from building to building, to be divided in the following manner: Take 10 feet in the center for a parking, where trees could be planted, giving good shade in summer to the occupants of the houses on each side of the street and affording 15 feet roadway for each side of the street. This parking and arrangement of the streets through squares would afford the children ample playground and save them from the many dangers liable to happen on public streets from trolley cars, teams, automobiles, etc.; of course, there are other methods for street construction, but the one here suggested would no doubt be desirable, and give the houses air and sunshine, so essential to afford a bright, healthful home.

The police department could carry on this work without additional expense to the government; the police officers could not only be made preservers of law and order, but also as far as possible suppress and remove every source of evil, particularly those endangering the morals of our youth. They could also be made the sanitary inspectors and collect the monthly rents and installments from the people who rent or purchase these houses; this money would go right back into the funds of the government, and be available for the improvement of other such property, which in time would eliminate every undesirable and uninhabitable house in the city.

If such an arrangement should be adopted it would bring about an entire change in our city government, for instead of the police officers being the prosecutors and persecutors of our unfortunate and criminal classes, who are ruined by the existing vices spread nearly everywhere, they would suppress and remove as far as possible the vices and save the citizen. I predict that if this plan were put in operation it would reduce the criminal class more than fifty per cent. The policeman should act as the good Samaritan, which would elevate him to the highest rank in public service, and make him beloved and respected by every good citizen; in this way he could be made the greatest power for good.

While this plan is perhaps new in our country, somewhat similar plans have worked successfully in several foreign countries. I know that foreign experiences do not apply fully to our country, and a plan might work successfully there and not here on account of different political and social conditions, but the problem is about the same and its solution is of basic importance. We can profit by foreign experience and modify the plan so as to meet our social and political conditions. I submit the plan herein outlined. Having the problem to deal with in the United States, we should be the leaders and not the followers.

Granting, then, that the problem exists, and that the United States should lead in its solution, I know of no city where it could be tried to better advantage than in the City of Washington, and its success here would mean, in time, its success in every city in our country. There is no reason why our city should not be the finest in the world, morally as well as materially and intellectually, and it soon would be if we set about it in the right way. We have already secured prestige as a center of art, letters and legislation. Let us endeavor likewise to protect and influence our citizens to the highest moral standard by aiding them to secure better homes and to guard and protect them from the contaminating influence which now confronts them nearly everywhere.

APPENDIX.

The following is a letter received from Professor H. W. Wiley, Bureau of Chemistry, U. S. Department of Agriculture:

WASHINGTON, D. C., *November* 4, 1908.

MR. GEORGE M. KOBER,
923 *H Street, N. W.*,
Washington, D. C.

DEAR SIR:

Your favor of October 27 at hand and in reply desire to state that the question of Drug Habit has received considerable attention by the Division of Drugs, and could place at your disposal much valuable information. We are collecting this information as rapidly as possible and expect in the near future to submit to the Secretary for approval and publication, a bulletin dealing with Acetanilid, Antipyrin and Phenacetin.

We also are in possession of information as to the institutions and their methods of treating unfortunate drug habitues, particularly those addicted to the use of Opium, Morphine, Cocaine, etc.

I am enclosing copies of two bills which were introduced at the last session of Congress. The object of these bills is to regulate and minimize the evil at present resulting from the indiscriminate sale and use of the agents enumerated therein. If you could make it convenient to visit the Drug laboratory of this Bureau, we would be in a position to place at your disposal much information which would be of great assistance to you in your work.

Respectfully,
H. W. WILEY,
Chief.

The following is a letter received from Dr. Lyman F. Kebler, Chief, Division of Drugs, U. S. Department of Agriculture:

WASHINGTON, D. C., *November* 21, 1908.

DR. GEORGE M. KOBER,
No. 1819 *Q Street,*
Washington, D. C.

DEAR SIR:

I am herewith transmitting data on the following subjects: The Harmful Effects of Acetanilid, Antipyrine, and Acetphenetidin (Phenacetin); Cancer Cures; Female Pills; Soft Drinks Containing Caffeine, etc.; The Dope Question; Consumption Cures; Habit Cures, and Prescription Nostrums. I did not include the list of headache remedies for the reason that they are not as yet complete. We have found approximately 365 which have a fairly large sale, that is more than the local sale of a drug store, but not more than one-half of same have been investigated in the Division of Drugs. I shall be pleased to forward you the entire list with the understanding that there might be one or two which are not actually headache remedies but are believed to be such from the trading name.

Respectfully,
L. F. KEBLER,
Chief, Division of Drugs.

Enclosure: Manuscript.

SOFT DRINKS CONTAINING CAFFEINE AND EXTRACTS OF COCA LEAF AND KOLA NUT.

By Lyman F. Kebler, M. D., Ph. D.
Chief, Division of Drugs, U. S. Department of Agriculture.

During the past decade soda fountain specialties containing caffeine, extract of kola nut and extract of coca leaf, the active principle of which is cocaine, have been offered in considerable quantities and, due to extensive and attractive advertising, both as beverages and as headache remedies and nerve tonics, their sale has assumed large proportions.

The first appearance of preparations of this type was in the south in the eighties, their introduction following the success which Moxie had attained in the East, though this particular drink was of an entirely different character. From the South the demand spread to other sections and the number of products has increased until at the present time there are probably over one hundred of them bottled and sold all over the United States. The greatest demand is still in the South, however, and almost every drug store, confectionery shop and fruit stand has its favorite product on sale. The carbonated goods in bottled form are offered on the trains. People of all classes, young and old, delicate women, and even little children consume these beverages indiscriminately and no warning is ever given of the baneful effect of the powerful habit-forming drugs concealed therein. It is therefore small wonder that the prevalence of the so-called "Coca Cola fiend" is becoming a matter of great importance and concern.

It is well known that some of these products are mixed under the most unsanitary conditions. The sugar, water and drug material will be dumped into a pot standing in the cellar of some low building, or even a stable, where the ceiling is covered with dust, cobwebs and dirt of all descriptions and the floor littered with filth. The steam from the boiling kettle, condensing on the ceiling, collects the dirt in the drops of water and this soon falls back into the mixture. Again, the sirup will boil over onto the floor and a sticky mass remains which soon collects straw and filth of all descriptions and becomes a rendezvous for flies and other vermin, for usually no attempt is made to clean it up.

Judging from the names of most of these products it would appear that extract of kola nut is one of the chief ingredients, and, while in certain instances this drug is undoubtedly present, in most cases the caffeine has been added as the alkaloid caffeine obtained from refuse tea sweepings or made artificially from uric acid occurring in the Guano deposits of South America, or in the citrated form, and the sirup colored with caramel. The cocaine found is usually added in the form of extract of coca leaf. Some of the manufacturers claim that the extract used is prepared from a decocainized coca leaf, the refuse product discarded in the manufacture of cocaine.

An investigation of these products was undertaken about a year ago and it was found that the following products contained both caffeine and extract of coca leaf:

Afri Cola, The Afri Cola Co., Atlanta, Ga.
Ala Cola, Ala Bottling Works, Bessemer, Ala.
Cafe Coca, Athens Bottling Works, Athens, Ga.
Carre Cola, E. Carre Co., Mobile, Ala.
Celery Cola, The Celery Cola Co., Birmingham, Ala.; Dallas, Texas; Nashville, Tenn., and St. Louis, Mo.
Chan Ola, L. M. Channell, New Orleans, La.
Chera Cola, Union Bottling Works, Columbus, Ga.
Coca Beta, The Coca Beta Co., New York City.
Coca Beta, Southern California Supply Co., Los Angeles, Cal.
Coca Cola, Coca Cola Co., Atlanta, Ga.
Pilsbury's Coke, A. L. Pilsbury, Jr., Co., New Orleans, La.
Cola Coke, Lehman-Rosenfeld Co., Cincinnati, Ohio. (This preparation was formerly sold under the name of Rocco Cola.)
Cream Cola, Jebeles & Calias Co., Birmingham, Ala.
Dope, Rainbow Bottling Co., Atlanta, Ga.
Four Kola, Big Four Bottling Works, Waco, Texas.

Hayo Kola, Hayo Kola Co., Norfolk, Va.
Heck's Cola, Heck & Co., Nashville, Tenn.
Kaye Ola, A. W. Kaye, Meridian, Miss.
Koca Nola, Koca Nola Co., Atlanta, Ga.
Koke, Coleman & McKeever, Frankfort, Ky.
Kola Ade, Wiley Manufacturing Co., Atlanta, Ga.
Kola Kola, W. J. Stange Co., Chicago, Ill.
Kola Phos, John Wyeth & Bro., Philadelphia, Pa.
Koloko, Halberg Bottling Works, Mobile, Ala.
Kos Kola, Sethness Co., Chicago, Ill.
Lime Cola, Alabama Grocery Co., Birmingham, Ala.
Lima Ola, Wine Brew Co., Macon, Ga.
Mellow Nip, Rainbow Bottling Co., Atlanta, Ga.
Nerv Ola, Henry K. Wampole & Co., Philadelphia, Pa.
Revive Ola, O. L. Gregory Vinegar Co., Birmingham, Ala.
Rocola, American Manufacturing Co., Savannah, Ga.
Rye Ola, Rye Ola Co., Birmingham, Ala.
Standard Cola, The Standard Bottling Co., Denver, Col.
Toka Tona, California Commercial Co., Los Angeles, Cal.
Tokola, Samuel Smith & Co., Chicago, Ill.
Vani Kola, Vani Kola Company, Canton, Ohio.
Vim-O, Vim-O Company, Eagle Lake, Texas.
French Wine of Coca, Wine of Coca Co., Boston, Mass.
Wise Ola, The Wise Ola Co., Birmingham, Ala.

The following preparations were found to contain caffeine, but there was no evidence to the effect that coca leaf in any form had been used in their manufacture:

Calycine, Calycine Co., Norfolk, Va.
Celery Cocoa, Celery Cocoa Co., Los Angeles, Cal.
Citro Cola, Miners Fruit Nectar Co., Boston, Mass.
Deep Rock Ginger Ale, Abney Bros., Athens, Ga.
Fosko, E. Carre Co., Mobile, Ala.
Heck's Star Pepsin, Mrs. Ida Heck, Nashville, Tenn.
Koke, Coan & Harbin, Bluff City Bottling Co., Memphis, Tenn.
Koke Ola, Eagle Bottling Co., Frankfort, Ky.
Kalafra, Mead Johnson Co., Jersey City, N. J.
Kumfort, The Kumfort Co., Atlanta, Ga.
Lime Juice & Kola, Parke, Davis & Co., Detroit, Mich.
Lon Kola, Lon Kola Co., Danville, Ky.
Meg-O, Parr Bros., Baltimore, Md.
Mexicola, Celiko Bottling Works, Raleigh, N. C.
Pau Pau Cola, Pau Pau Cola Co., Detroit, Mich.
Pedro, N. J. Parker & Co., Washington, D. C.
Pepsi Cola, C. D. Bradham, New Bern, N. C.
Speed Ball, E. Pilzer, Speed Ball Co., Inc., Washington, D. C.
To-Ko, The To-Ko Company, Hagerstown, Md.
Vril, Brand Bros., Chicago, Ill.

Besides the above preparations which have been analyzed a number were reported from different parts of the country but no samples were submitted. From their names, and from what evidence there was submitted, they contain either caffeine or coca leaf extract, or both:

Charcola, H. C. Metzger, Meridian, Miss.
Cherry Kola, Williamsport, Pa.
Cola Soda, Jacob House & Sons, Buffalo, N. Y.
Coca Ginger, National Beverage Co., Atlanta and Chattanooga.
Field's Cola, H. C. Field, High Point, N. C.
Imported French Cola, Alabama Grocery Co., Birmingham, Ala. (Claimed to be carbonated Wiseola.)
Jacob's Kola, Tampa, Florida.
Koko Ale, Salt Lake City Soda Water Co., Salt Lake City.

Kola Cream, The Henzerling Co., Baltimore, Md.
Kola Pepsin Celery Wine Tonic, W. J. Miller, Cleveland, Ohio.
Kola Vena.
Loco Kola, Norton, Virginia.
Mintola, Davis Kelley Co., Louisville, Ky.
Mate, Mississippi Ice Co., Clarksdale, Miss.
Pikmeup, Scales, Wilson Co., Greenville, S. C.
Ro-Cola, Savannah, Ga.
Schelhorns Cola, Evansville Bottling Co., Evansville, Ind.
Vine Cola, California Commercial Co., Los Angeles, Cal.
Viz, Alabama Grocery Co., Birmingham, Ala. (Claimed to be carbonated Wiseola.)

HABIT CURES.

By Lyman F. Kebler, M. D., Ph. D.

Chief, Division of Drugs, U. S. Department of Agriculture.

Nostrums for the cure of the drug and liquor habits are widely advertised throughout the country in the public press. A request for further information, with regard to the subject of one of the advertisements, is followed by the receipt of printed matter setting forth the virtues of the remedy, and a "symptom blank" whereon the inquirer is expected to state over his signature the kind of drug he is using and the dose which he is accustomed to take daily. Upon returning this blank, filled out, the inquirer is informed as to the price at which the remedy in question can be procured. This is usually at a specified price per bottle, or treatment, treatment being reckoned by the month. Some concerns do not employ the symptom blank but sell their products to all who apply, without question. In almost every case the remedy contains a generous proportion of an opiate, usually in the form of morphine. Ostensibly the treatment is based upon the reduction plan; the patient is advised to give up the use of the drug which he was formerly taking and to depend entirely upon the remedy, and to reduce the daily dose of this at regular intervals until he finally does away with its use entirely. This, as a matter of fact, he never does because he finds it just as difficult to break away from the morphine-containing "support" as from the straight morphine which he formerly took. Meantime the concern which furnishes the nostrum reaps pecuniary benefit.

Most of the nostrums for the cure of the liquor habit depend for their efficacy upon the nauseating qualities of the ingredients which they contain. * * * The remedy can be taken voluntarily by the patient himself, or administered secretly by introducing it surreptitiously into his food or drink. Promises of a most alluring character are held out with regard to the latter method of administration, and the wives and mothers of drunkards have been known to go to great lengths to procure the money wherewith to purchase these nostrums. The result of both methods of administration is the same: the patient's stomach and digestion are injured, perhaps permanently, and no real good is accomplished. A list of the "cures" for the drug and alcohol habits is given below.

HABITS.

Drug Cures.

W. J. Carney, 567 Lebanon Street, Melrose, Mass. *Opium.*
St. Paul Association, 46-48 Van Buren Street, Chicago. *Drugs.*
Purdy Sanitarium, 614½ Fannin Street, Houston, Texas.
Harris Institute, 400 West 23d Street, New York. *Drugs.*
O. P. Coates Co., 917-919 New York Life Bldg., Kansas City. *Drugs.* Habitina.
Dr. Stewart-Hord Sanitarium, 360 Franklin Avenue, Shelbyville, Ind. *Drugs.*
Waterman Institute, 14-18 Lexington Avenue, New York. *Drugs.*
Cedarcroft Sanitarium, Lebanon, Tenn.
New Malay Opium Cure, Rev. J. C. Ives, 134 E. 25th Street, New York.

"99" Morphine & Opium Cure, Krouskeep, Clark and Van Buren Streets, Chicago.
St. James Society, Suite 245, 1181 Broadway, New York. *Drugs.*
Manine Medical Co., 3201 Locust Street, St. Louis. *Drugs.*
B. M. Wolley Co., Atlanta, Ga., Box 387. *Opium, whiskey, etc.*
Alexander Coöperative Sanitarium Co., Fulton, Ky.
Dr. W. A. Starnes, Atlanta, Ga.
Dr. W. J. Tucker, Atlanta, Ga.
Dr. L. F. Myers, Columbus, Ga.
Dr. G. W. D. Patterson, Atlanta, Ga.
The Acme Opium Cure, Kirkwood, Ga.
James Sanitarium, Memphis, Tenn.
Drug Crave Crusade, 41 Union Square, New York.
Dr. J. L. Stevens Co., Lebanon, Ohio. Hyoscin.
Comstock Remedy Co., Lafayette, Ind. *Fluid Extract Coca.*
National Aid Society, 134 E. 25th Street, New York.
Windsor Laboratories, 134 E. 25th Street, New York. Malay Opium Co.
Richie Co., 105 St. James Place, Brooklyn, N. Y.
Mackay Treatment Co., 61 Maiden Lane, New York.
Scientific Remedy Co., 45 W. 34th Street, New York.
Oppenheimer Institute, 159 W. 34th Street, New York.
Mrs. Carney, 567 Lebanon Street, Melrose, Mass.
World Remedy Co., Syracuse, N. Y.
H. C. Keith, Losantville, Indiana.
The Dr. Koonse Cure, 812 Calhoun Street, Ft. Wayne, Ind.
Compound Oxygen Association, 125 Douglas Avenue, Ft. Wayne, Ind.
Awaine's Antidote Sanitarium, Cleveland, Ohio, 3731 Cedar Avenue.
Dr. Rutledge Medical Institute, 477 Ellicott Square, Buffalo, N. Y.
Lanoix Cure Co., Kansas City, Mo.
Dr. W. J. McKanna, Reidsville, N. C.
Delta Chemical Co., St. Louis, Mo.

Alcohol.

Orrine. *Alcohol.*
White Ribbon Remedy Co., 218 Tremont Street, Boston.
Dr. J. W. Haines, 1515 Gleen Bldg., Cincinnati, O.
The Dr. Brannaman Cure, 210 Chaman Bldg., Kansas City.
Aur-Mon-O, 110 W. 34th Street, New York.
James Sanitorium, Memphis, Tenn.
Mrs. Margaret Anderson, 512 Home Avenue, Hillburn, N. Y.
Physicians Co-operative Association, Chicago.
Parker Willis, 16 State Life Bldg., Indianapolis, Ind.
Kansas Anti-Liquor Society, 601 Gray Bldg., Kansas City.
Trunk Bros. Drug Co., 400-402 16th Street, Denver, Colo. *Cigarette Habit.*
Rogers Drug & Chemical Co., "Easy to Quit," 1982 5th and Race Streets, Cincinnati.

DR. KEBLER'S LIST OF HEADACHE REMEDIES.

A. B. C. Headache Powders.
Acetafein (O. C. & Son).
Acetalix.
Acetanilide Comp. U. S. P.
Acetanol. Headache Powders.
Ache-Head.
Acme Headache Wafers.
A. D. S. Headache Wafers.
Dr. Agnew's Headache Tablets.
Ake-in-the-Head-Tablets.
Alex Harmless Headache Powders.
Allen's Headache Powders.
Alpha Headache Wafers.
Ammonol.
Analgia (Merrell's) Tablets.
Analgine.
Anti-Headache (Davis).
Anti-Headache Moroneys.
Antikamnia.
Anthony's Headache Powders.
Anti-Pain Pills.
Armstrong's Headache Powder.
Atkinson's "99."

Babcock's Headache Pills.
"Bar-Ben" Formula A, for headache.
Barton's Headache Powders.
Beck's Little Wonder Headache Powders.
Beck's Universal Headache Tablets.
Beekman Headache Wafers.
Bell's Coryza Tablets.
Bensen's Headache Powders.
Benter's Headache Powders.
Bergwall's Acme Headache Wafers.
Big 4 Headache Powders.
Billington's Headache Powder.
Bi-Lo-Zone.
Bird's Headache Tablets.
Block's Headache Cure.
Dr. Bob's Headache Powder.
Dr. Bonker's Headache Powder.
Bouchard's Capsules.
Boulanger's Headache Cure.
Bovine Headache Powder.
Brain Food. Harper's.
Brangeine.
Brant's Headache Tablets.
Brazilian Compound Anti-Headache Tablets.
Broa's Headache Powders.
Bromo Caffeine. (K. & M.)
Bromo-Celery. (Arnold.)
Bromo Compound. (Arnold's.)
Bromodine for Headache.
Bromo-kamnia.
Bromoline.
Bromo Lithia.
Bromonia.
Bromo-Quinine-Laxative.
Bromo-Seltzer.
Bromo-Soda. (Warner's.)
Bromo-Tanilid.
Bromo Vichy.
Bromo Vin.
Brook's Headache Powder.
Bro-tanilid.
Brow-ease.
Bull's Headache Specific.

Caf-Aceton. (Wyeth's.)
Caffeine Compound.
Campaign Headache Tablets.
Capudine.
Carey's Heart Tonic Headache Wafers.
Cascara Bromide Quinine. (Hill's.)
Catarrh & Headache Snuff. (Marshall's.)
Celery-Caffeine. (Chelf's.)
Celery & Caffeine Bromide. (French's.)
Celery Fomo.
Celery Tea.
Celery Vesce.
Cencura. For headache.
Cephalgine.
Cephaline.
Cerralgine.
Chinese Headache Cure.
Dr. Clay's Headache Powders.
Clover Headache Powders.
Coffee-no.
Cold Capsules. (Stott's.)
Cole's Headache Cure.
Cole's Headache Powder.
Coppai's Headache Cure.
Coronet Headache Cure. (Bacon.)
Courney's Headache 15 minutes.
Cran-O-Tone.
Craemer's Headache Powders.
Crown Headache Powder.
Curalgia.

Daggett & Ramsdell's Headache Powder.
Daisy Headache Powder.
Daisy Headache Wafer.
Dale, Hart & Co.'s Headache Powder.
Darling's Cold Cure.
Darlington's Headache Powder.
Davidson's Headache Powders.
Davis's Headache Cure.
De Kalb's Anti-Headache Powders.
De Kay's Headache Wafers.
De Loste's Headache Powders.
Dick's Laxative Cold Cure.
Dilliard's Headache Powder.
Doris's Headache Buttons.
Dutton Headache Powders.
Duffy's Headache Specific.

Eames's Tonic Headache Wafers.
Ebb's Kolo Caffeine Headache Tablets.
Eddy's Headache Specific.
Eezee's Headache Cure.
Electric Headache Powder.
Empire Headache Wafers.
Eureka Headache Powder.
Eureka Headache Cure.

Fabra's Headache Cure.
Failing's Headache Powder.
Falck's One Minute Headache Cure.
Father Schubert's Little Headache Tablets.
Fisher's Headache Capsules.
Fisher's Quick Headache Cure.
Five Minute Headache Powder.
Flag Salt.
Flower's Sure Headache Cure.
Dr. Foote's Headache Powder.
Fowler's Magic Headache Powder.

Garfield Headache Powders.
Geneseo Headache & Neuralgia Remedy.
G. E. S. S. Headache Tablets.
Gessler's Headache Wafers.
Getman's Headache Powder.
Gibson's Instant Headache Cure.
Gipsy Headache Wafers.
Goldsmith's Headache Wafers.
Goll's Dollar Headache Cure.
Good's Headache Cure.
Gregory's Headache Powder.
Grosser's Headache Cure.
Guarana Compound.
Guy's Headache Powder.

Hageman's Headache Wafers.
Haller's Headache & Neuralgia Cure.
Haller's Relief Headache Powder.
Hall's One-Minute Headache Cure.
Hantz's Headache Tablets.
Harmless Headache Powder.
Dr. Hart's Headache Powder.
Hartwig's Headache Tablets.
Hawley's Celery Headache Capsules.
Head-A-Cure.
Headache Antidote. (Edward's.)
Headache Chocolates.
Headache Konseals.
Headache Powders. (Kellogg & Carrier.)
Headachine.
Headache Stop.
Head-Ease. (Bethea's Liquid.)
Head-Ease. (Cumming's.)
Head-Ease. (Peter-Heat-Richardson's.)
Head-Ease. (White's.)
Head-Easy. (Stedman's.)
Headine.
Headache Kolone.
Headache Kuro.
Headoria. (Pearson's.)
Hed-ake. (Preston's.)
Hedakur. (Hasson's.)
Hed-Kure. (Saenger's.)
I. N. Hegeman & Co., Headache Powder.
Henry's (Dr.) Headache Powder.
Hick's Capudine.
Hobson's Headache Cure.
Hoffman's Harmless Headache Powder.
Hogan's Headache Powder.
Holland's Headache & Neuralgia Powder.
Holloway's Headache Powder.
Howe's Headache Cure. (P. M. Co.)
Hufeland's Sure Headache Cure.
Hutchin's Headache Pills.

I. C. R. Cold & Catarrh Relief.
Imperial Headache Powder.
Instant Headache Wafers. (Brown & Hoff.)
I. S. M. A. Caffanilid.

James's Headache & Liver Pills.
Dr. J. W. James's Miniature Headache Powder.
Japanese Rapid Headache Powder.
Johnson's Headache Powder.
Johnson's Utah Headache Salt.
Jones's Cold & Grippe Cure.
Joslyn's Instant Headache Tablets.

Kahle's Headache Powder.
Kali-Caffein. (Claimed to be a salt.)
Kalluorine. Headache Powder.
Kapitol Headache Wafers.
Kef.
Kelly's Headache Cure.
Kennedy's Headache Powder.
Kennedy's Headache Tablets.
King's Headache Tablets.
Knox-a-Cold Tablets.
Knill's Orange Headache Pills.
Kohler's Headache Powders.
Koladine.
Kolo-Caffein.
Kolone. (Lakin's Hedake.)
Koos' Nervine Headache Powder.
Kopfaline.
Kramer's Headache Capsules.
Kra-Nol.
Krause's Headache Capsules.

La Belle Headache Tablets.
Lake's Headache Powder.
Lamprey's Headache Cure.
Lane's Headache Capsules.
Lantz's Gold Coin Headache Cure.
Lawrence's Headache Powder.
Laxacold.
Laxative Bromo Quinine. (Paris Med. Co.)
Lemon Seltzer.
Lemke's Headache Powder.
Lesage's Headache Specific.
Leslie's Headache Prescription.
Dr. Little's Headache Specific.
Little Wonder Headache Powder.
Dr. Lord's Headache Powder.
Dr. Lung's Headache Powder.

Magnet Headache Cure.
Marquet's Headache Wafers.
Martin's Headache Cure.
Man's Headache Powder.
McGale's Headache Cure.
McGrath's Headache & Neuralgia Tablets.
Malydor Injection.
Megrimine. (Whitehall's.)
Metzger's Headache Tablets.
Meyer's Headache & Neuralgia Cure.
Microtine. (Lepper's.)
Migrainin. (Baker's.)
Migrainoes. (Digestine Co.)
Migrain Tablets for Headache.
Migrane Tablets.
Migrain Tablets. (Squibbs'.)
Miles's Anti-Pain Pills.
Momad's Headache Capsules.
Moore's Harmless Headache Powder.
Morgan's Headache Wafers.
Morin's (Dr. Ed.) Headache Wafers.
Morrison's Headache Cure.
Moyer's Headache Tablets.
Mueller's German Headache Powder.
Munyon's Headache Remedy.

Narco Headache Remedy.
Narco Cold Tablets.
Natronilid. (Peck.)
Nature's Headache Tablets.
Nervease Powders.
Neuralgolyne.
Neuralgia Capsules.
Neuralgine.
Neuralgyline.
New Era Headache Cure.
"999" Headache Powder.
Now or Never, Headache Powder. (H. M. Co.)
Nyal's Headache Cure.

Oa Oa Headache Powder.
O. K. Headache Cure. (Houston Drug Co.)
Olusa Headache Powders.
Omega Headache Powders. (Babcock's.)
Orangeine.
Oriene's Headache Cure.
Otto's "Such A" Headache Powder.

Pain in Your Head. (Cooper's.)
Pain King. (John's.)
Pain King. (Shaker's.)
Pain Paint. (Goll's.)
Pain Paint. (Wolcott's.)
Paragon Headache Remedy.
Parker's Headache Powder.
Pasteur's Stop a Pain Tablets.
Peck's Headache Powder.
Peek's Headache Powder.
Peerless Headache Powder.
Perfection Headache Wafers.
Perrine's Quick Relief. Headache Powder.
Perry's Headache Powder.
Perry's Headache Wafers.
Phenalgine.
Phenine. Headache Powder.
Phenokola. Headache Powder. (B. & S.)
Phenolgin.
Phenyo-Caffein.
Phospho-Caffeine Compound.
Platt's Headache Wafers.
Positivus Headache Tablets.
Poythress Cold & Grippe Cure.
Preston's Hed-Ake Cure.
Princess Headache Powder.
Pusheck's Cold Tablets.

Quaker Headache Capsules.
Quick Cure. (Dr. Wood's.)
Quick Relief Headache Cures.
Quickstop. (Mattison's.)

Ramee's Sick Headache Remedy.
Ramsey's Headache Elixir.
Raphael's Headache Wafers.
Rawleigh's Quinine 15 Minute Tablets.
Red Dragon Seltzer.
Rennard's Headache Remedy.
Requa's Headache Powder.
Rexall Headache Pills.
Rexall Headache Powder.
Rexall Tablets.
Richardson's Headache Powder.
Rich's Headache Powder.
Rough on Headache Tablets.
Royal Headache Powder.
Royal Headache Tablets.

Salvitae Headache Tablets.
Sanderson's Headache Cure.
Sand Mountain Headache Tablets.
Sanitatis Headache Tablets.
Sano Headache Cure.
Sawyer's Headache Powder.
Schmidt's Headache Cure.
Schrader's Headache Powder.
Shilling's Bromo Headache Tablets.
Shoop's 20-Minute Headache Tablets.
Shrader's 10-Minute Headache Powder.
Solan's Headache Wafers.
Soda Caffo Headache Tablets.
So-Doc. Headache Cure.
Spen's Headache Tablets.
Stanton's Harmless Headache Powder.

Schwalb's Electric Headache Powder.
S. & D.'s Headache Salt.
Severa's Headache & Neuralgia Wafers.
S. & H.'s Headache Salt.
Shac-Stearn's Headache Cure.
Sherlou's Headache Powder.
Sherman's Headache Cure.
Stark's Headache Powder.
Stearn's Headache Cure.
Stewart's (Dr.) Headache Powder.
Stott's Cold & Grippe Tablets.
Sunshine Headache Powder.
Swift's (Dr.) Headache Cure.

Talbot's Headache Wafers.
Taylor's Headache Powder.
Ten Thousand Dollar Headache Tablets.
Thieman's Headache Powders.
Thurston's Headache Powder.
Tousley's Catarrh Powder.
Truc's Headache Tablets.
Tubb's Cold & Grippe Tablets.
Tucker's Fever & Headache Powder.
Turkish Headache Powder.

Uncle Sam's Kola Headache Powder.

Van Marter's Headache Powder.
Vegelene Headache Tablets.
Vegeta Headache Powder.
Vick's "Kadok" Headache Powder.
V-O Headache Relief.

Walker's Headache Wafers.
Wall's (Dr.) Headache Powder.
Ward's Headache Powder.
Watkins's Headache Tablets.
Wayne's Headache Powder.
Webster's Headache Powder.
Weeks' Break Up a Cold Tablets.
Welling's Headache Cure.
Wheat's Headache Powders.
White Seal Headache Powder.
White & White Headache Powder.
Wing's Headache Specific.
Wischerth & Dogier's Headache Powder.
Wright's Paragon Tablets.
Wolf's Headache Cure.
Wood's Headache Tablets.

X L Headache Wafers.

Wonder Cure Headache Powders.

Yager's Handy Headache Tablets.
Yarnell's Columbian Headache Cure.
Young's Headache Powder.
Yu Kan Headache Powder.

Zeman's Headache Powders.
Zogat's Headache Powder.
Zerbst's Little Giant Headache Remedy.
Zerze's Positive Headache Cure.

FEMALE PILLS.

By Lyman F. Kebler, M. D., Ph. D.
Chief, Division of Drugs, U. S. Department of Agriculture.

The publication of advertising matter inviting attention to means whereby conception can be prevented or abortion produced is specifically prohibited by law. Hence the manufacturers of drug products which are intended to be used for these purposes are careful not to state openly in their advertising literature the purposes for which their preparations are intended. They manage, however, to convey this information in such a way that those who are interested can readily understand. This is effected largely through the character of the name employed for the preparation, and through the agency of more or less guarded statements which appear upon the label or in the advertising literature. The names of most of these preparations are in themselves characteristic. They often contain the names of drugs which have come to be more or less widely known as emmenagogues or abortifiacients, for example, "Pennyroyal Pills," "Tansy Pills," "Cotton-root Pills." Others are so worded as to be equally characteristic: "Female Regulating Pills," "Female Regulator," "French Pills," "Female Pills," etc. Each of these terms indicate more or less clearly the purpose for which the preparation is intended. In addition more or less guarded statements appear in the advertising literature. These preparations are rarely recommeded for the purpose mentioned above only, but are in most cases recommended for the cure of about all of the diseases to which the peculiar female organism is liable. Among these conditions, "Suppressed Menstruation" is given especial prominence. The following, taken from the advertising literature of some of the products in question, are given in illustration: "French Pills. Safe and Positively Infallible. Relieves Painful and Suppressed Menstruation," etc. * * *

Female Beans, Lion Drug Co., Buffalo.
Feminina, Mansfield Drug Co., Memphis.
Dr. Trousseau's Celebrated Female Cure, Dr. Trousseau Chemical Co., New York.
Female Pills, Arch Pharmacal Co., San Francisco.
Dr. Arthur's Pennyroyal & Tansy Pills, Palestine Drug Co., St. Louis.
Dr. Bane's Female Pills, A. V. Bane Medical Co., St. Joseph, Mo.
Dr. Cheeseman's Female Regulating Pills, Cheeseman Medicine Co., New York.
Chichester Pennyroyal Pills, Chichester Chemical Co., Philadelphia.
Fiske Clarke's Female Pills, Williams Mfg. Co., Cleveland.
Sir. Clarke's Female Pills, Job Moses, 150 Nassau Street, New York.
Dr. Constan's Female Pills, Fred'k K. Ingram & Co., Detroit.
Dr. Conte's Female Pills, Dr. Felix Conte, Paris.
Madam Dean's Female Pills, United Medical Co., Lancaster, Pa.
De Koven's Comp. Pennyroyal Pills, Crescent Chemical Co., Elmira, N. Y.
Dubois' Female Pills.
Du Choin's Female Pills.
Ducro's Female Pills, Dr. L. Ducro, Paris.
Duponco's Golden Female Pills.
Duquoi's Female Pills, Dr. Du Quoi, Paris.
Duquoin's Pennyroyal Pills.
Golden Female Pills.
Female Pills, Hillside Chemical Co., Newburgh, N. Y.
John Hooper's Female Pills.
Hooper's Green Seal Female Pills.
Job Moses' Female Pills, 10 Spruce Street, and 150 Nassau Street, New York.
King's Tansy Female Pills, King Medicine Co., Boston.
La Franco Female Pills, La Franco Medical Co., 145 N. 8th Street, Philadelphia.
La Rues French Tabloids.
Lane's Female Pills, Allan Pfeiffer Chemical Co., St. Louis.
Leslie's Pennyroyal Pills, Arthur Chemical Co., St. Louis.
Lyon's Tansy Pills, Empire State Drug Co., Buffalo.
Mnagogo Female Pills, New York & London Drug Co., New York.
Monell's Female Pills, C. E. Monell, New York.
Mott's Pennyroyal Pills, Williams Mfg. Co., Cleveland.
Olive Branch Female Pills, Olive Branch Remedy Co., South Bend.
Piso's Female Pills, The Piso Co., Warren, Va.
Red Cross Tansy Pills, Norman Lichty Mfg. Co., Des Moines.
Dr. Sanderson's Female Pills.
Female Pills, S. B. Medicine Mfg. Co., Portland, Ore.
Seguro Compound, Seguro Mfg. Co., 531 K Street, Sacramento.
Dr. J. Simms's Female Pills, J. H. Simms, Wilmington, Del.
Stearn's Tansy Pills, New York & London Drug Co., New York.
Dr. St. Jean's Female Pills, St. Jean Medical Co., 2004 Lexington Avenue, New York.
Tansy Cotton Root Female Pills, New York & London Drug Co., New York.
Dr. Thomas's Pennyroyal Pills, Arthur Chemical Co., St. Louis.
Dr. Larue's Female Regulator.
Severa's Female Regulator, W. F. Severa Co., Cedar Rapids, Ia.
Watkins' Female Remedy, J. R. Watkins Medical Co., Winona, Minn.
French, Antyseptin Female Remedy, Antyseptin Co., Gouverneur, N. Y.
Magnolia Blossoms, Female Suppositories, South Bend Remedy Co., South Bend, Ind.
Orange Blossom Female Suppositories, Dr. J. A. McGill Co., Chicago.

WASHINGTON, *June* 15, 1908.

DR. GEORGE M. KOBER,
Chairman, Committee on Social Betterment
of the President's Homes Commission.

DEAR DR. KOBER:

While you verbally told me to "take my time," pressure of official duty has very much delayed formal reply to your letter, that the Committee on Social Betterment of the President's Homes Commission is very anxious to determine as far as possible the causes of juvenile delinquency, wife-desertion and non-support, with special reference to standards of living, intemperance, and other faulty environments, and should be very glad to receive from me the results of my observation and experience.

Since there are many causes back of every act voluntarily elicited by the human will, it will be difficult to enumerate them all, even though the inquiry be limited, as you suggest, by special reference to standards of living. Yet certain broad conditions, rather than causes, may be indicated, improvement of which may be brought about by the exercise of the police powers of the State, in the interest of the general good of society and consequently of the individual also, for, as the President has often reminded us, in the long run we are all going up or going down together.

Over twenty years' service as a volunteer helper of the unfortunate has, of course, given me some ideas relative to what the State might do to alleviate conditions, without destroying individual initiative. First, I was early impressed that homes in alleys foster vice and crime. Many citizens fear to enter the alleys even in daylight, the alleys are away or aside from the beaten lines of travel, and their isolation and comparative privacy encourage drunkenness and vagrancy and kindred evils, not only on the part of denizens but on the part of outsiders glad to avail themselves of the cover of the alleys in their licentiousness. No more efficient work could be performed for social betterment in Washington than to absolutely abolish all human habitations in alleys. It is a service of such transcendent importance to the whole city that it would even be worth while for the whole city to bear the burden of purchasing these alley properties and changing these properties into interior parks.

Rents in the alleys range from $7.50 to $9 per month for four-room houses, without water in the house, though there may be water in the yard. The renters are drivers receiving from $5 to $7.50 per week as wages, or day-laborers, receiving from $1 to $1.50 per day, or hod-carriers, who, when members of the union, receive $2.25 per day, otherwise less. Of course, these work people lose wet weather and are subject to other losses of time from different vicissitudes, such as waiting for building material. Sometimes the renter is a foreigner who is a skilled artisan or stone mason, drawing $4 per day, whose earnings suggest a better environment. When his children are brought into court, charged with shooting crap or other disorderly conduct, with the companions made in the alleys, he is brought to a realization that the child is more than the dollar and readily agrees to get out of the alley into a home more suitable for an aspirant to American citizenship.

We have Building Regulations designed to secure the proper amount of air-space for sleepers; yet, several families will sometimes crowd into these small alley houses, and this is not the limit, for a lodger at fifty cents a week will often be accommodated upon the floor of the kitchen in addition. The family income is almost invariably increased by the laundry work done in these overcrowded tenements by the women occupants. Think of them, therefore, as nuclei for the spread of contagion. These alley women prefer to do laundry work at their homes in the alleys, where there is the least constraint and the most gossip.

Another serious evil is the commingling of the sexes. Children beyond the age of puberty are in the same room, often sleeping in the same bed. Sad are the results.

I endeavor in a familiar way to make these people appreciate the situation. In cases of overcrowding, they are reminded that they would not quarter cattle in such cramped shelter, for fear of breeding fever in the animals, and yet the human is infinitely more valuable. Where both sexes are occupying the same sleeping-room, the mother or the father is asked if she or he would place in that room a lighted match near a can of gunpowder. Of course not, and they are shown the greater danger from mingling the sexes thus when the passions are strong and there is much ignorance, and they are reminded that under such conditions common decency becomes impossible. It is not unusual for married couples to have well-grown children sleeping in the same room with them, sometimes in the same bed. If the poverty be great, such are required to use at least cheap screens as an aid to decency. Sometimes a careful survey of the joint income of the members of the family demonstrates the ability to get additional room, or house-space, especially if expenditures for vicious indulgences are cut out. And it is possible to get, even for the rents paid for alley-houses, houses of similar size upon the streets of certain localities.

The facts herein referred to are brought out in the court-hearings; but I early admonished the probation officers to make tactful inquiries along the same lines in their investigations, being careful, however, not to work *at* these people, but *with* them, in an endeavor to awaken ideals within the reach of the occupants of the houses in these hives of humanity.

The home conditions animadverted on give rise to drunkenness, breaches of the peace, wife desertion, and much of the juvenile delinquency. Out of the habitations of the drunkard or the father who does not provide for those of his own household, go children not with the innocence or the buoyancy of childhood, but children suffering the cravings of hunger and familiar with scenes of debauchery. To satisfy hunger, they must either beg or steal. Often, too, these children find in the tumult of the street, where no one nags them, surcease from the bickerings of the home. The street becomes their most prized rendezvous, to be preferred to the discipline of the school, and, therefore, herein arises much truancy, and hence arises much of the so-called *wanderlust,* to be prefixed to the quarrelsome home.

The non-support law is used to remedy these evils as far as practicable. The delinquent husband is made to go, on Saturday night, while he has his weekly wage in his pocket, to the nearest police-station and pay there a stipulated amount to be turned over through the clerk of this court for the support of his wife or children, or both. Either drunkenness or infidelity is an incident in these non-support cases, and so a pledge is also exacted to refrain from the use of liquor for the space of a year, and to cut out entirely the illegal intimacy, a short instruction being given upon the venereal diseases following upon such wrongful indulgences.

During the first year of the operations of this court, $6,050.59 were thus disbursed to needy families. In the eleven months of this fiscal year, the amount was $19,235.36, in small sums weekly, from $1.50 up. There are now 236 families upon the relief-roll at the court. This has saved a burden to the taxpayers, minimized drunkenness, and made lazy men work to support themselves and families. Some of these men have improved so in an economic sense that they have stated they were glad to have been brought into the court.

I may add that I wish you every success in your noble work for the betterment of conditions in the Capital of our country, which I am proud to say is my own native city. President Roosevelt will ever be remembered as the President who sought to make this city the embodiment of the highest ideals of American life.

Sincerely yours,
WM. H. DE LACY,
Judge

SOCIAL BETTERMENT

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